The Builder.

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Christ Church, North Brixton.—Mr. Beresford Pite, A.R.I.B.A., Architect ..... *Two Double-Page Ink-Photos.*
New Public Library, Cardiff.—Mr. Edwin Seward, F.R.I.B.A., Architect ..... *Two Single-Page Ink-Photos.*

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Modern Opera Houses and Theatres.

GREAT improvements have been made of late years in the planning and construction of English theatres so far as the provision for the safety of the public is concerned. Improvement in this respect has been forced on the proprietors and undertakers of new theatres by the fears of the public, who have been thoroughly frightened by some terrible theatre fires and panics, and who will now insist on having a theatre as safe as human ingenuity can render it, and have induced their official representatives in municipal government to frame compulsory regulations to that effect. It is now a matter of course that every new theatre is "constructed entirely of fire-resisting materials" (in the auditorium portion at least) and has so many extra or emergency exits as to suggest the idea sometimes that the principal object in getting into a theatre is to get out of it again. For these improvements we may be thankful; but safety is not everything, even in a theatre, and one must still regard theatre architecture in England as presenting in the aggregate a melancholy spectacle. No class of building can be more architecturally suggestive than a theatre, both in regard to general architectural lines and to symbolical treatment in detail. Yet there is no class of public buildings which seems to be so hopelessly given up to architectural commonplace or worse. In the majority of cases it is a mere matter of financing, and the architect is often some one of whom nobody has ever heard before, who has presumably some business connection with the people who are running the theatre or finding the money. It is the rarest thing possible to find an architect of the first eminence appearing as architect of a theatre in this country, in London especially. It was quite exceptional that Mr. Collcutt was commissioned to put an architectural clothing on the theatre which has now, unhappily, fallen to the level of the "Palace Music Hall," and even in this case the eminent architect was only called upon to treat the exterior of a building planned and arranged without any nominal architect. There are one or two architects who have established a repute as theatre "experts;" but are they, in any other sense, among our leading architects? And does any one ever hear of such men as Mr. Norman Shaw, Mr. Waterhouse, or Mr. Jackson being invited to build theatres?

It may be urged that a theatre requires peculiar knowledge and experience on the part of an architect; but that is surely no reason why an eminent architect should not be incited to acquire that experience. The architect who is called a "theatre-expert" had to build his first theatre, and acquired his knowledge in doing so; and an eminent architect, an architectural artist in the true sense, could do so just as well or better. Every architect of real power can turn his mind to, and solve, any architectural problem propounded to him. But eminent architects are not asked to build theatres because the promoters of them do not want art; they want a theatre run up as fast as possible to begin earning money off the site; and they either have got a man in their pocket who has assisted in financing it, or they go to a man who has the name of a theatre-expert because they will get it done quicker and cheaper than by an architect who wants to produce a really architectural building.

The real reason for this arises out of the fact touched upon in the Introduction to Mr. Sachs's monumental book,* that in England we have the theatre only as a form of private speculation, while on the Continent, at all events in France, Germany, and Austria, the theatre is more or less, in many cases, a national or government institution. We cannot do better than quote Mr. Sachs's words on this point:—

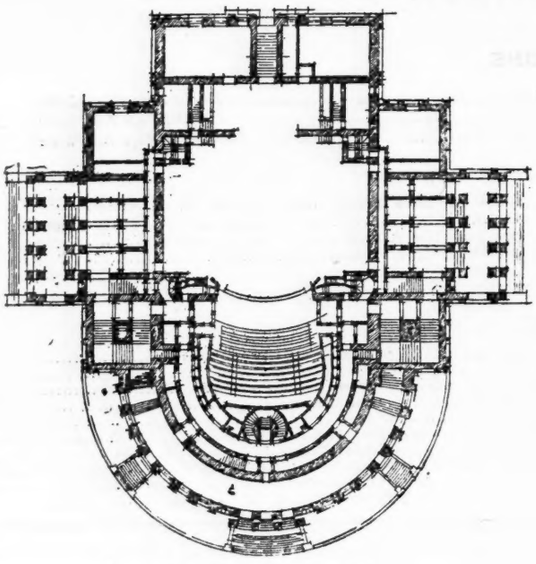
> "No more striking demonstration can be afforded of the difference in the requirements of theatre building than a comparison of Continental ideas on the subject with those prevalent in England. In this country, with but few exceptions, the Private Theatre is governed in its requirements by investors, or ambitious actors, who cater for the pleasure of sensation-seekers, among a people practically devoid of any feeling for architecture.
>
> On the Continent it is far otherwise; there a genuine interest is manifested in architectural work; with the result that popular and invigorating drama finds a worthy home amid appropriate and dignified surroundings, and even the Variety entertainment is housed in a building of considerable architectural pretension.
>
> From these contrasting spirits it is easy to see how the building of English theatres has been put into the hands of architects who are merely good planners, good constructors and business men, with the qualification of being able to provide for a maximum audience at a minimum outlay. It is of no importance that the architect should have a true feeling for art, if only he can secure the latest trick of the plaster-manufacturer to catch the vulgar taste. What counts more than any repute for architectural design is that he should have the talents and faculties of a smart financial agent or plausible company-promoter, and, preferably, be able to find some money for the enterprise. The Continental theatre-architect, on the contrary, must be an architect in the highest sense of the term. He must be an artist who takes a lively interest in the essentially technical side of his work, but leaves financial scheming entirely alone; and he must be conversant with the art of planning, but need not necessarily be 'a smart planner.'"

This is a plain statement of a contrast not creditable to this country, and of which we had a crucial instance very recently. When the site of "Her Majesty's Theatre" was cleared, we heard first of a large opera-house to be built on that site from the plans of a theatre-expert; then we learned that the company with which he was connected could not raise the money, and a second company appeared on the scene with their own scheme ready and their own theatre-expert in their pocket, and obtained the concession, having proved that they were financially sound. As to the question of the architectural treatment of so fine and historic a site, that might take care of itself; the choice of the architect and of the architectural treatment simply followed the financial arrangements.

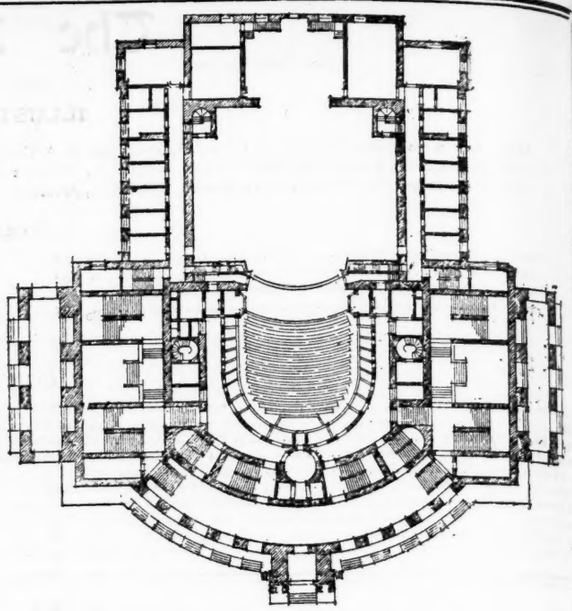
It is to be hoped that some opportunity may arise, and may not be thrown away, for doing something better than this with English theatre architecture; for erecting a theatre in which the art of architecture will really be considered, and the building treated as something more than a mere speculation.

Of course the whole matter would assume a different aspect if we had in England the theatre regarded as a partly public or national institution, supported more or less by public money. That is the great distinction between this and most other European countries; in the latter the theatre is lifted out of the region of mere business speculation, and the management is not under the necessity of cutting things so close and of

* "Modern Opera Houses and Theatres; examples selected from playhouses recently erected in Europe, with descriptive text, &c., &c." By Edwin O. Sachs, Architect, and Ernest A. E. Woodrow, A.R.I.B.A. Volume I. London: B. T. Batsford; 1896.



Old Opera House, Dresden.



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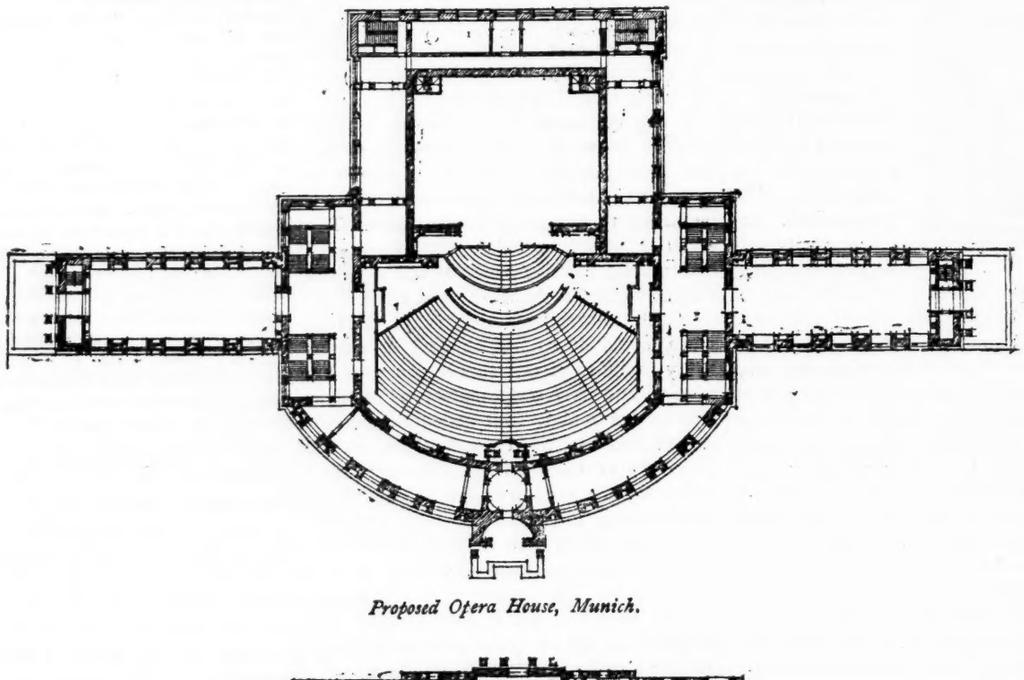
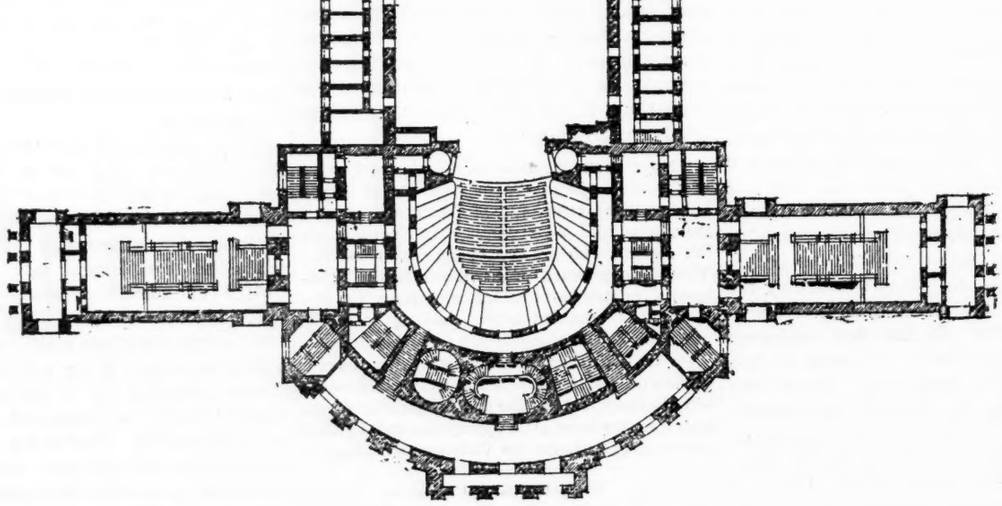
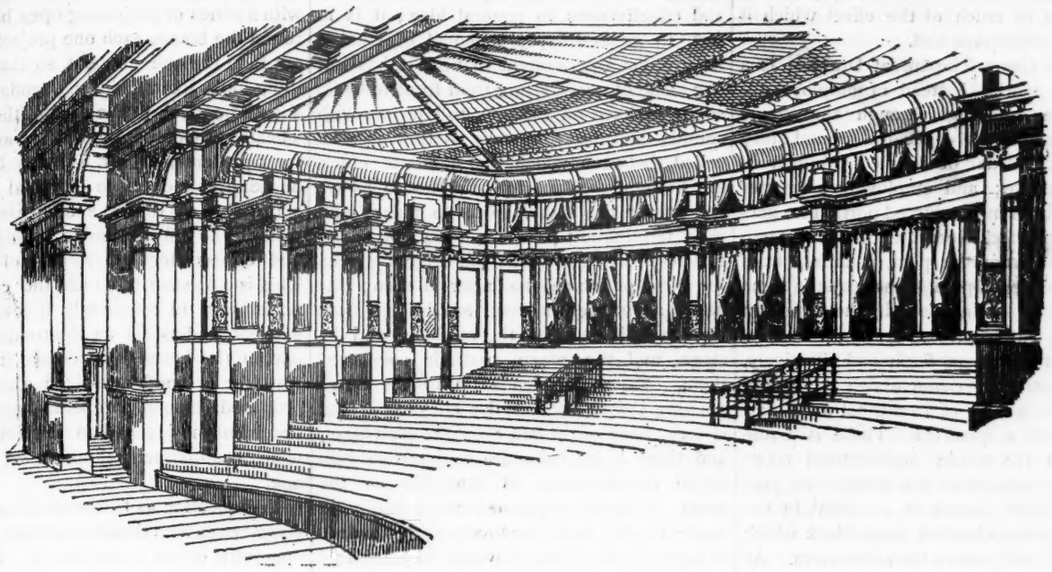


Proposed Opera House, Munich.



Court Theatre, Vienna.



Interior of Wagner Theatre, Bayreuth.

avoiding all outlay except on what the public demands. Hence there is not only greater scope for the architect on the Continent, but a much greater variety in the classes of theatre building. Mr. Sachs, who is much better acquainted with Continental theatres than most English architects, enumerates no fewer than five classes, viz.: Court Theatres; National and Government Theatres; Municipal Theatres; Subscription Theatres; and Private Theatres. The two latter classes may or may not have a subsidy from Court, Government or Municipality. In England we have simply the latter class of the five, with no subsidy. It is obvious at a glance how theatrical architecture and theatrical art also must be cramped and hampered by comparison in this country.

The Court Theatre is an institution specially characteristic of a paternal Monarchical Government, but it seems a pity that this old-fashioned idea of the Court having its own theatre should have been entirely ignored in this country; it affords an opportunity for building a theatre *de luxe*, for bestowing special attention on architectural and decorative design, and for giving performances to which a favoured portion of the public can be admitted at a low rate, or by invitation. However, such an institution will probably be considered to be out of keeping with our increasingly democratic ideas; but for the National and the Municipal theatre, the one supported or assisted by the Government, the other by the Municipality of the city in which it is built, there is surely room. There is no reason against the carrying out of such a scheme except that it has been our habit in this country to leave theatres to private enterprise. There might be opposition (though with no good reason) to the National Theatre; we should hardly think there would be much opposition to the idea of carrying out a Municipal theatre, if people were once fairly familiarised with it. The building of a new theatre in that case would be the subject of a large architectural competition, as in the case of a Town Hall, when the best architectural work would be chosen; instead of being a mere hole-and-corner affair governed only by financial considerations. The London County Council might do worse than set the example of building a Municipal theatre; it might prove a more popular and in its way a more beneficial scheme even than working the tramways.

The existence abroad of National and Municipal Theatres has naturally led to a much more liberal and stately architectural treatment than has ever been attempted in this country. Covent Garden is a large house on which an eminent architect was employed from the beginning (the last case of the kind in England); but as the principal opera house of the capital it is a poor concern architecturally, and miserably deficient in dignity in its internal staircases and corridors. Absurdly plain as Drury Lane is externally, its main staircase is really the only bit of large and stately architectural effect that any London theatre, or probably any English theatre, can show.

With the Continental theatres it is different. There is every encouragement to the architect to develop stately architectural effect in the exterior. Site is not limited by mere considerations of economy, and the theatre has in most cases a clear area round it. Hence it is possible to treat staircases and entrances in a broad and effective manner. Mr. Sachs in his introduction gives several types of plan, which we are enabled to reproduce here, showing the gradual development of a type in which the main entrances and staircases form projecting wings on each side of the structure. It is something like the history of the development of the cathedral transept. The old Dresden Opera House shows this idea in an early stage, with two side porticoes without much projection. In the new Dresden house this feature is further developed, and brought closer up to the front. In the old Dresden plan it will be noticed that the exterior lines exactly conform to the centre of the auditorium. In the new house, by the two Sempers, this idea is retained, but in a modified form; the curve still shows externally, but it is not the real curve of the auditorium, but a much flatter one, adopted as more convenient for architectural grouping. There is, however, less simplicity and truth of architectural treatment in this form of plan. The adoption of the actual curve of the auditorium externally is the finer and truer architectural treatment of the plan. In the proposed opera house for Munich the inner and outer curves of the auditorium are again assimilated, being both segmental curves, and the side entrances are spread out into long flanking wings, a very effective treatment architecturally, in cases where there is room for it. In the plan of the Court Theatre at Vienna, by Gottfried Semper and Hasenauer, we have this form of plan in its fullest development, though here again we find the inner and outer curves are not the same; the segmental curve is retained outwardly; the inner line of the boxes shows the usual semicircular curve. The boxes next the proscenium must have a very limited view of the stage, except for the occupants in the front seats.

This theatre heads the list of the large illustrations in the book, and as the author says, it is a remarkable example of grandiose architectural treatment applied to a theatre; but the architects did not make nearly as much out of it as their plan seems to promise. There is a want of character about it. Neither the sweep of the curves, nor the special function of the wings as staircases, are properly emphasised; each of these portions should have had its special and marked treatment, and this is wanting; the staircase blocks might just as well be a group of offices, for anything the architectural treatment indicates; and in the curves the repeating portions are too few to give the full perspective effect which might have been gained; the whole thing seems too much like a hotel or palace of somewhat abnormal shape. The arrangement of the plan in detail lacks simplicity; there is quite a bewildering congeries of staircases, some of which might certainly have been dispensed with. The effect of the grand staircases in the wings is also marred by the fact that they lead from and up to doorways much narrower than the stairs themselves. A grand staircase like this, leading straight up into a building, should lead up to a columned portico or a series of openings, as wide and as large as itself, to preserve dignity and proportion; here the reverse is the case. In short, the Vienna Theatre is a noble idea in the main,

with a bad treatment in detail, resulting in the loss of much of the effect which it might otherwise have had.

Semper's Court Theatre at Dresden is a much finer work. Instead of employing a large order running through the whole height, he employs a rusticated ground story with a small order of coupled columns in the story above; and employing a greater number of bays in the curved portion he gets much more effect from the curve. As will be observed from the plan, it differs from the old Dresden Opera House (by the same architect—burned in 1809) in the insertion of a central feature projecting from the curve, and this is treated very finely and effectively, with an upper story rising above the line of the curve in a kind of triumphal arch, and crowned with a quadriga. There is a fine unity about the whole architectural treatment of the exterior of the auditorium portion; the failure comes in, as usual, in the treatment of the elevated stage block which rises considerably above the auditorium. As usual, this stage block is nearly square on plan, and Semper saw no better way to treat it than to give it a pediment towards the front, and a raking roof. A pediment is entirely out of place on a square block of building; it is only suitable to a long building, as representing one end of the roof; when placed on a square building it merely makes it look as if it were half the length of a building, from which the other half had been cut away. This illustrates what has been before remarked in our pages, that a really characteristic contrasted treatment of the stage and auditorium portion in a large theatre has never yet been carried out anywhere, unless the Americans have anything to show in this way which we do not yet know of; they are the people most likely to have made something of it. In the auditorium of a theatre we want curved lines on plan; horizontal treatment, as expressing the division into tiers; and grace of detail, as representing the festive portion of the building; in the stage portion squareness of treatment and vertical lines, and a kind of castellated solidity, as representing the storage and working portion of the building. Nothing could be more suggestive for contrast of effect than the respective functions of the auditorium and stage portions of a theatre, but we do not know a single instance in which this has been perceived and made most of. Sometimes the whole is run together as one unbroken design—a manifest architectural falsity; in other cases, as here, the stage-block is clumsily bedecked with a pediment which is quite at variance with its proportions and with its object. People who seek for something new to be done in architecture may find their opportunity in properly and picturesquely treating and emphasising the auditorium and stage portions of a large theatre.

The treatment of the main staircases and the curvilinear foyer in the Dresden Opera House is simple and very effective, and the staircases are of ample and spacious character.

The Wagner Opera House at Bayreuth,* to which a chapter and some illustrations are devoted, is externally one of the most hideous and ill-designed pieces of theatre architecture ever erected; but its interior arrangement is a masterpiece of simplicity and effectiveness in general idea; it is in fact, in general type, a model of what a theatre for Opera ought to be. It has but one slope of seats, rising from front to back, so as to have no galleries to interfere with sound; and the wing-walls, as they may be called, between which the audience enter, are brought forward into the house as we get nearer the stage, so as to make, with their terminating pilasters, a kind of colonnade converging towards the stage, between the vista of which the latter is seen; the band, as is well known, are hidden from view in a pit between the audience and the stage, and the stage partially overhangs them. Everything leads up to the stage opening through which the enchanted land is seen; none of the audience face each other, and there is no influence to interfere with entire concentration of attention on the stage. A house so planned could hardly be made to pay under ordinary circumstances in London; but the plan would do admirably for a municipal or subsidised house, where artistic effect was held to be of more consequence than receipts, and might be suggested as a plan for a State or municipal opera house. For an ordinary theatre it would be unsuitable, as from its long shape it would throw back some of the audience too far from the actors; but for an opera house, where music rather than acting is the object, it is a plan that ought not to be allowed to drop.

The distinction between the conditions under which a Continental opera-house is usually built, with an ample and symmetrical site, and those under which important buildings of the same class in this country often have to be carried out, is strikingly illustrated by a comparison of the plan of "D'Oyly Carte's Opera-House" (as Mr. Sachs calls the Palace Music Hall) with those of most of the Continental houses. Here we have a theatre squeezed anyhow into a shapeless site without a right angle in it, with the result that everything in the plan seems crippled and distorted. To be sure, this is a plan elaborated without an architect, and might have been made better than this, though perhaps not without sacrificing some strips of ground; but it is an exceedingly unsatisfactory plan to look at, and seems entirely without purpose or backbone. The exterior treatment, on the contrary, contrasts favourably with that of many a better-planned house; but it is here that the architectural artist comes in, and Mr. Sachs has not unsuitably made the view of this building the frontispiece to his first volume. The plan of Daly's Theatre is nearly as intricate and squeezed up, again owing partly to conditions of site; it seems a congeries of small staircases twisted about in all directions. It has been urged that the public should, for safety, have a plan of the theatre given them with the playbill, in order to know how to find their way out; but to give them such plans as these would only be to present them with a puzzle inextricable to the majority of them. We want more ample room on theatre sites, and with that more straightforward and symmetrical planning, both for architectural and practical reasons.

Among the peculiarities of theatre design illustrated in the book is the Flemish Theatre at Brussels, which has been architecturally ruined owing to the "ruling idea" of safety for the audience in case of fire having induced the architect to surround it with a series of projecting open balconies, all round the house, each one projecting further out than the one above it, so that the whole thing looks like a Chinese pagoda. Attention should be given to the plan of the Municipal Theatre at Odessa, by Fellner and Helmer, for it presents, as Mr. Sachs truly observes, an admirable example of radial planning of staircases, so that the staircases are equidistant and afford similar facility of ingress and egress for every part of the house. This is a theatre in which the curve of the auditorium is completely followed on the exterior, and as far as the treatment of this part of the house is concerned it is a model plan for a moderate-sized theatre. The proposed immense opera-house for St. Petersburg is planned on the same principle, which we distinctly think to be the correct one.

The question as to the combination of the stage-boxes with the architectural proscenium opening is one of some interest. A deep proscenium arch is an advantage for Opera, which is usually a much less realistic form of art than Drama, in throwing the stage further back from the audience and making a more decided line of demarcation between the real and the ideal. It would be worth while to have a deeply-recessed proscenium opening for this object alone, but most of the architects who plan one seem to think it a duty to utilise the space, and accordingly, as in the Budapest Opera House, we have a very deep proscenium opening (twenty feet from front to back), defined by coupled pilasters at each margin, but interrupted between the pilasters by royal boxes with projecting balconies where royalty can sit in full view of stage and audience; an arrangement which must considerably weaken the æsthetic or idealising effect of the deep proscenium. However, in such a case it is a question between royalty and art.

The book we have been referring to has yet to be completed by two further volumes, of which the third is to contain, among other things, illustrations of technical details of stage construction and machinery. The large scale of the plans renders it a very valuable collection for study, and the whole book will probably be the finest publication yet devoted to the illustration of the theatre. But so far as it has gone it seems to show that there is more to be done with the theatre, in an architectural sense, than has been done yet, and that no great theatre has yet been built in which the best form of plan has been combined with a really effective and characteristic architectural treatment of the exterior.

* Why does the author spell it "Beyreuth"? "Bayreuth" or "Baireuth" is the usual spelling.

NOTES.

Canterbury Cathedral.

WE wish to press on all our readers who have any money to spare for a subscription to a great national object, the importance of the appeal made by the Dean of Canterbury for funds to put the great cathedral in better repair. The interest of Canterbury Cathedral is quite exceptional, and no other ancient building in the kingdom can compare with it in this respect. Not only is it one of the finest and most varied in architectural interest of all our cathedrals, but it is indissolubly connected with the early history

of the English nation, and is hallowed by a thousand historic associations. At present the crypt, of special interest, has long been neglected; the cloisters are slowly perishing, and the Chapter-house is said by the Dean to be in "a melancholy state of dilapidation." Twenty thousand pounds are required to make the cathedral and its adjuncts secure for another century. Half this sum has been raised by private exertions; surely there ought to be enough persons in England who value such a building to subscribe the remaining 10,000*l.* with little delay. The subject ought to be of special interest to architects; and though they are not a rich profession, small donations mount up, and will be welcomed.

A Monument to Lord Leighton.

THE proposal to erect a monument to Lord Leighton in St. Paul's Cathedral will be generally approved, and ought to excite a good deal of interest among artists. It is to be hoped that a monument worthy of the building and of the artist whom it is to commemorate will be secured; and let us point out that such a monument, to be properly designed, ought to be the joint work of an architect and sculptor, as it certainly would be in France. No one would have appreciated this point more than Lord Leighton himself, who was fully alive to the importance of the architectural element in monumental design.

London Water Companies' Bills.

THE Parliamentary Committee engaged for some weeks past in considering the divers bills presented by the London water companies gave their decision on the most important of the measures on Tuesday last, the 23rd inst. The decision had special reference to the Staines Reservoirs Bill, promoted by the West Middlesex, the Grand Junction, and the New River Companies. In passing through Committee the measures have been considerably modified; the Committee, for instance, was not prepared to grant power for "additional lands" for prospective works, except such parts as were necessary for the construction, supply, and discharge of the reservoirs. The power to take water out of the Thames is to be limited to 80,000,000 gallons per day, and the power to forward water down the pipes or conduit is also to be limited to 30,000,000 gallons per day on the average of any one month. These figures, of course, refer only to the scheme placed before the Committee. In case of emergency, however, the companies, on receiving the assent of the Local Government Board, will be permitted to increase their drawings from the Thames to any quantity not exceeding 45,000,000 gallons per day on the average of any one month. The Committee is of opinion that the supply of water from the Thames should not secure to the promoters any priority over the existing or future powers granted, or to be granted by Parliament, to take such water. In spite of the last provision, and other minor suggestions, it is only too evident that by giving the companies these increased powers Parliament will render the acquirement of their properties more and more difficult.

The Education Bill.

THE Education Bill, as our readers are aware, is dead. It is to be hoped that in any further attempts at educational reform by the present Government elementary and secondary education will be kept entirely separate, and that technical education will not be mixed up with elementary education. The general system of elementary education in this country is fairly satisfactory, for at any rate it is managed on some kind of uniform plan. The same cannot be said either of secondary or technical education. It is desirable to establish more of a system for the purpose of the two latter kinds. There is no need for the Government to do more in regard to elementary education than to relieve the pressure on small Voluntary and Board Schools, a pressure which is largely caused by the smallness of many school areas. The real and pressing need is the improvement of the secondary and technical education of the country, and if the Government is anxious to do some good non-political work there is ample opportunity in this matter. After the experience of the present session, however, it is to be hoped that the Government will take counsel with educational experts, even though they are political opponents.

The Paris Exhibition.

THE competition for the designs for the two new permanent palaces which are to be connected with the exhibition will be adjudged on July 12, and after that there is now no legal obstacle to the immediate commencement of the preparations. The new bridge opposite the Esplanade des Invalides will probably be the first work taken in hand. At the same time a tunnel will be commenced between the bank of the Cours la Reine and the Palais de l'Industrie, for the subterranean transport of materials; and towards November the pavilion of the "Ville de Paris" will be removed; at the same time the "Jardin de Paris" will be suppressed, and all the space reserved for the exhibition will be at the same time enclosed with a fence. In short, the Champs Elysées neighbourhood will be rendered hideous for four years, for the sake of the exhibition in the fourth. Is it worth while? However, it is settled now, and "thirty-nine foreign powers" have given official recognition to the scheme.

Supposed and Real Dangers of Electricity.

WE had occasion a few weeks ago to protest against sensational accounts of the dangers run by firemen of getting a fatal shock when directing jets of water on a fire, from an accidental contact of the jet with a live electric wire at a moderately high pressure. It seemed to us such an important matter, as a delay of a few minutes while the electric current is being turned off might prove very serious, that we investigated the matter experimentally and found that under certain circumstances a shock was possible, but that it was a slight one. We have not heard whether the County Council have made any experiments or not, but from Berlin we learn that Professor Slaby has made tests on bare wires at extra high pressures, a voltmeter being connected to the metal mouthpiece of the hose of a fire engine and to the earth, and the jet of water being directed at three bare wires carrying alternating currents at a pressure of 10,000 volts. No deflection on the voltmeter was observed, which proved that a fireman holding the hose would have been perfectly safe. The jet of water having a high velocity must, very soon after leaving the pipe, be thoroughly mixed with air, and this must increase its naturally high resistance. Whilst the "fatal shock" theory is thus conclusively disproved, yet our experiment shows that a fireman holding the metal mouthpiece could get a shock; and if at the time he was standing in a dangerous position, and the shock was quite unexpected, it might easily have disastrous consequences. In our opinion, the electrical department of the London County Council should at once make further experiments on the matter and publish their results.

The Condition of the Brent.

COMPLAINT is being made of the condition of the so-called River Brent, which it is now stated is little better than an open sewer. In 1893 Dr. Wheman, in his report to the Local Government Board, gave a very bad account of this stream, and it is now alleged that its condition has become worse. There is no doubt that sewage is discharged into the tributaries of the Thames, such as the Colne and the Brent, in a manner which is injurious to the public health. We cannot but think that if the Thames Conservancy were to direct their attention to one single tributary and oblige local authorities and riparian owners to cease from polluting it they would be doing much better work than by their present habit of what may be called roving complaints all over the entire basin of the Thames. A concentration of their energy on one stream, which resulted in its purification, would be an object-lesson for the whole of the Thames Valley. As it is, the Local Authorities in this district can by means of dilatory motions and correspondence keep the Conservancy from having any real influence. If one thorough effort were made by this body in respect of a single stream it would do more good than the present practice of mere complaint by correspondence over a large area.

Sanitary State of Brecknock.

DR. FLETCHER'S report to the Local Government Board on the sanitary circumstances of the Brecknock Rural District, states that while nineteen of the villages and hamlets in the district have been provided with water supplies, the villages of Llangorse, Trecastle (two of the largest villages in the district), Pwllgloyw, Pontfaen, and Aber are urgently in need of water supply. There is not any public sewer in the district, nor any systematic means of drainage for liquid house refuse. Many houses are entirely without drainage of any kind, and some of the larger villages are urgently in need of proper means for the removal of liquid refuse. A few houses are provided with water-closets, but generally the provision for disposal of excrement throughout the district is extremely unsatisfactory, and in not a few cases privies were observed built over watercourses, or by the sides of rivers, in such a manner as to secure the discharge of their contents into the streams. Throughout the district the removal of excrement and other refuse is left to individual householders, with, one may suppose, the usual consequences.

Chicago Exhibition Medals.

BY a circular from the Society of Arts we are informed that the medals and diplomas awarded to British exhibitors at Chicago

have at length been issued to the English Ambassador at Washington, and have been transmitted by him to the Foreign Office. Sir Henry Trueman Wood has been requested by the Secretary of State to undertake the duty of distributing them, and this will be done at once. All the exhibitors may expect to receive their medals within about a month from the present date. One may perhaps say, "Better late than never," but the delay has been unconscionable, and does little credit to the American official departments which are responsible for it.

Old Clergy House, Alfriston.

THE "National Trust" for places of historic interest are appealing for funds for the permanent preservation of the ancient clergy house at Alfriston, in Sussex, which has before been mentioned and illustrated in our pages. It is one of the most interesting remains of mediæval timber building in existence, and is in fact quite unique in character among such structures as are preserved to us. An immediate expenditure of 350*l.* is required in order to save the building from falling into dilapidation; and if this can be procured, it is proposed then to use the large room, with the open roof, as a library for village purposes, and a place open to the public on proper conditions. It is to be hoped that the requisite funds will be obtained, for there is absolutely nothing else in England of the same type as Alfriston Clergy House; it is an example of a kind of building that has almost entirely disappeared.

The Privy Garden, Whitehall.

ACCORDING to the plans prepared by the Office of Works for the enlargement of Gwydir House, Whitehall (now occupied by the staff of the Charity Commission), it appears that new rooms will be built along the east side of the garden, which still represents a portion of the Privy Garden belonging to Whitehall Palace. The old garden is delineated in Fisher's plan (1680) as covering all the square space—rather more than three acres—between the Stone Gallery (east) and "the Street" (west)—the Street having Holbein's Gate and King-street Gate at its either end. Next, southwards, to the garden lay the Bowling-green, adjoining which stood the riverside house (shown with a tower and a gallery in a painting by Canaletti) built for the second Duke of Richmond by Lord Burlington.* J. T. Smith says that most of the house was pulled down *circa* 1778 by the then Duke, for the erection on almost the same site of another, which was destroyed by fire in 1791. A house named "Lord Loudoun's," in a plan made in about 1740, stood on the Bowling-green area next, west, to the Duke's; on their sites Richmond-terrace was built. The former Montague House (on the Privy Garden site), the roof of Gwydir House, and Lord Loudoun's appear in a singular drawing (1807) by Smith, taken from the roof of the Banqueting Hall. The Privy Garden, screened from the street by a high wall, had terraces and plots, with several marble and bronze statues whereof some were taken to Windsor and Hampton Court. Therein were put the glass dials constructed by Francis Hall in 1669, and the dial made for Charles I., when Prince of Wales, by Edmund Gunter, rector of St. George's, Southwark, and Professor of Astronomy at Gresham College. The pedestal for the latter was made by Nicholas Stone, who writes in his MS. "account book":—

> And in 1622 I mad the greet diall in the privy garden att Whit Hall for the wich I had 46*l.*

Gunter died in 1626; the dials perished in the fire of January 4, 1697-8. It is proposed to replace in the garden the bronze statue (which has just been cleaned) of James II., erected in 1686 by Tobias Rustat, and sculptured by Gibbons—it certainly merits a better position than the obscurity of Whitehall-gardens. The inscription has "Dei Gratiæ," and until some years ago had "Jacobi" for "Jacobus." The socket-holes of the former railing are visible. Gwydir House, the first home, we believe, of the Reform Club, afterwards became the office of the Poor Law, now the Local Government, Board.

* See the aquatint in Smith's "Westminster"; there had been the Duchess of Portsmouth's apartments.

Foreign Opinion on our Artisans' Dwellings.

FOREIGN municipalities, more especially the German Town Councils, have lately been making a practice of sending their officials on tours of inspection, with a view of studying subjects under the consideration of the authorities. Nearly every department has an Official Travelling Fund, and the officers are allowed to avail themselves of it when the occasion arises. England has been frequently visited by foreign officials of late, more especially in respect to sanitation and the housing of the working classes, and the reports are generally very flattering. One of the most thorough reports of this kind has been framed by the chief of the Medical and Building Act Department of the Hamburg Senate, and the pamphlet has been illustrated with plans. We here find one criticism which the County Council might do well to note. The rent of model artisans' dwellings is considered to be too high for the average labourer's income. What we require are cheaper dwellings, even at the risk of individual privacy being somewhat interfered with. The step between the model artisans' dwelling and the model common lodging-house is a very great one. An intermediate step is wanted; some of the new Boundary-street buildings already show a move in this direction.

The Planning of Hospitals.

WE may draw the attention of architects concerned in hospital planning to the letter on another page, in which a medical correspondent suggests that, under the present advanced condition of antiseptic surgery, the pavilion system is no longer a necessity for ordinary hospitals, and might now be abandoned. The proposition is certainly worth consideration.

Stencilling for Wall-Papers.

THERE has been on view in Messrs. Aldam Heaton & Co.'s studios in Bloomsbury-street, during the past week, an interesting exhibition of stencilling as applied not only to wall-papers, but also to curtain fabrics, such as mohair, satin wool, taffetas, union cord, balk cloth, &c. As to wall-papers, the undoubted advantages are that besides the gradation of colour which is obtained by hand stencilling, the design can be finished to suit the height of the wall, obviating the necessity of cutting it through which has to be done with ordinary block-printed papers. As applied to fabrics, as mentioned above, Messrs. Aldam Heaton & Co. claim to be the introducers of the method. By special treatment of the colours and the fabrics, the former are made "fast," so that the latter can be washed, which has been previously only possible with block-printed patterns. The designs and colouring are treated with breadth and regard to colour effect, and should be useful in certain types of decorative finish.

A Definition of Moorish Architecture.

THE following is one of the answers of a candidate in the "Intermediate Examination" for admission to membership of the Institute of Architects:—"Moorish [architecture] can easily be distinguished from Gothic by its very Classic details, and although partaking a style similar to Romanesque, is more nearly connected with Classic orders." This is not an answer from a young beginner in his 'teens, but an answer given in the second of the progressive examinations by a candidate probably well over twenty years of age. Does not this indicate that some such test of architectural education as is afforded by the Institute examinations is really called for?

St. Mary-le-Strand.

SOME of the more stupid members of the London County Council are again trying to get this church pulled down, though they were fortunately rebuffed last Tuesday. A Mr. Rose Innes, who is we believe a lawyer, undertook to assure the Council that there was no architectural beauty whatever in the church, and that the architect himself had apologised for its ugliness. The architect did nothing of the kind; he explained why he was compelled to build the tower on a rather unusual plan, narrower one way than the other. It is really disgraceful that people holding a position on the governing body of London should appear to band together to destroy the beauty of London. Architecturally the Strand would simply be ruined by removing the church.

THE FIRE BRIGADE EXHIBITION.

We had in 1893 occasion to comment at some length on the "International" Fire Brigade Tournament and Exhibition which was being held at the Agricultural Hall. This was the first gathering of its kind, and much of what was done called for severe criticism. The experiment is now being repeated, and we are glad to say that there is some improvement in the general arrangement of the show, and that, although there is nothing of a scientific character in the meetings of the English and foreign firemen—owing to the entire absence of any interest for the theoretical side of fire protection on the part of the executive—much is at least being done to encourage smart drilling in our provincial fire service, by organising a series of competitions among the brigades of the various districts. From a spectacular point of view, the performance of the firemen is both interesting and exciting. It is, however, a great pity that something is not done for the promotion of fire protection generally, and to encourage preventive methods, instead of only giving interest to rapid fire extinction; for, as we have so often said before, it is *fire prevention* which takes precedence of fire extinction.

As regards the programme of the Tournament, the smartness of the Metropolitan Fire Brigade in its drill and manœuvres on Saturday last is unrivalled, and the physical drill class introduced by Chief Officer Simonds calls for special mention. As regards the work of the Volunteer Fire Brigades this week, the competition drills showed what excellent material both in men and appliances our provincial towns can boast of, but the officers, as a rule, lay too much stress on the mere "swamping" of a fire with a maximum rapidity, regardless of water-damage. Since the National Fire Brigades' Union has been inaugurated a uniform method of drill has been introduced in most of the brigades governed by

its rules, and the gift of challenge shields for competition has done wonders in improving the drill efficiency of the individual brigades and men. There was, however, much in the display of a circus character, and the sooner such methods are prohibited by the executive the better for the standing of the Union.

As regards the manœuvres of foreign brigades, it is to be regretted that we had not the attendance of the team promised by the New York Fire Service, and that the clever team from Oporto, which we had seen in 1893, and which was again promised us, was unable to attend, owing to political troubles in that city. It is also remarkable that no German team, or Austrian team, is to be seen in the arena, as these are the countries from which we could learn much, as also from the Copenhagen Fire Brigade, and the Amsterdam Fire Brigade, if the Executive had invited them. The Canadians, however, attended with a smart squad of men and some interesting appliances from Montreal, and did their work in a manner which gave the student cause to ponder, and to look to some improvements in our own methods. France was represented by several teams from minor brigades, but, as in 1893, they only illustrated what we must term antediluvian methods, with such elementary appliances as to almost call for ridicule. Instead of inviting brigades of small reputation, it would have been better to request the presence of teams from Paris, Lyons, or other French cities where the fire departments can hold their own against other countries. The "village fair" element of bands, fanfares, &c., should also be banished from the French exhibitions in this country.

The performances at the Agricultural Hall are no doubt instructive in many respects, but the value of the Tournament is greatly enhanced by the facilities given at such gatherings for the exchange of opinions among the leading officers attending from the various countries. This was fully recognised by the executive, and whilst one section of the officers, headed by Chief Officer Simonds (Metropolitan Fire Brigade), Lieut.-Col. Seabrook (Rugby), and Chief Officer Henderson (Rickmansworth), were actively engaged at the Agricultural Hall, another party, headed by Chief Officer Dyson (Windsor), Major Dixon (Sutton), Chief Officer Dyer (Alton), and Mr. Edwin O. Sachs, were actively engaged in arranging a series of interesting excursions for the visitors. A number of social events, such as receptions, luncheons, and banquets, also added to the enjoyment, and assisted in making the different officers better acquainted with one another. There were many instructive debates primarily among the Austrian, Danish, Dutch, German, and Portuguese representatives which have had the tangible result of originating improvements of importance for a number of cities. The excellent fire stations which had lately been erected in London under the superintendence of Mr. Blashill were most carefully inspected, and the opinion unanimously expressed that there is nothing in Europe to rival these model buildings. Unfortunately, however, we have some of the most old-fashioned stations still left in such places as Clapham and Kensington, where, to our knowledge, it takes from three to five minutes to turn out the appliances, owing to the difficulties with which the men are beset. The salvage corps was visited, and their excellent buildings also much admired. An excursion was made to Brighton, where much of interest was seen, and also to Oxford, Birmingham, and Richmond; but the Birmingham visit was certainly the most instructive, especially as permission was granted to visit some of the large manufactories in that city, giving the visitor some idea of the "risks" our firemen have to contend with. Every facility was given by the authorities, and the mayors of Brighton, Oxford, Birmingham, and the other cities, vied with one another in their efforts to make these provincial inspections not only interesting but also pleasant. It is only in London that the present Lord Mayor was prevented, by reasons of economy, from officially receiving the firemen, as was the case in his predecessor's tenure of office in 1893.

In respect to the exhibition of fire appliances which was held in connexion with the Tournament, it must in the first place be mentioned that there was a loan collection which contained much of interest, including many of the old fire-appliances of former centuries. These were manned by men attired in the quaint garbs worn at the time of their construction, and when ranged in historical order under the able direction of Chief Officer Dyson, certainly made a very interesting feature. An exhibition of helmets and other equipments of Metropolitan firemen killed at their duty brought to the mind of the visitors the dangers of fire brigade work, whilst a collection of fire-office marks collected from all parts of the world were of special interest to those connected with insurance business.

The trade exhibits showed but little that was novel, owing, we are afraid, to nearly the whole of the Exhibition space having been given to one or two firms who monopolise the fire appliance trade of London to the disadvantage of the English fire service generally, the high prices which they are able to obtain for their goods preventing many of our minor brigades from obtaining a proper equipment, and a number of our larger brigades from obtaining a sufficient one. We would say in favour of these firms that their excellence in workmanship, finish, and enamelling is certainly unrivalled in the fire appliance trade of Europe; but as is always the case where there are monopolies, there is a marked want of initiation, of improvements. A *bonâ-fide* trade competition in the manufacture of fire appliances would be a boon to this country. What we missed most in the Exhibition were some new practical interchangeable hose "couplings." As is perhaps generally known, the old-fashioned screw "coupling" is still used in the Metropolitan Fire Brigade, whilst interchangeable gear has long been introduced in Northern Europe. What is shown at the Exhibition in this department does not show well in comparison with the "Storz" patents adopted in the Berlin and Vienna Fire Brigades. Some of the new "couplings" shown were, no doubt, useful for the rapid work of an exhibition drill, but for little else. It is high time to abolish the antiquated screw "coupling," and if we cannot invent something suitable in this country, we had better take up the German appliance, rather than waste so much precious time at our fires on account of unsuitable gear. Fire telegraphy was not well represented at the exhibition, whilst apparatus for self-help, *i.e.*, private fire-escapes, &c., were also not sufficiently representative. As regards the much-advertised "ball nozzle" of an American firm, we have but little confidence in it, nor do we see its advantages compared with gear which fulfils the same purpose and dates back some twenty years.

In reviewing the Tournament and Exhibition, we must, to our regret, still treat it as a kind of "show," and though we acknowledge the progress made as compared with the gathering of 1893, we are yet unable to accord it the position of a thoroughly practical congress. The institution is, no doubt, very young, but with more judicious management, and the experience of 1893 to go upon, the result should have been of a more practical nature, and, above all, the circus element should not have been so evident. Owing to the want of interest in the subject of fire-protection, taken as a whole, the executive missed the opportunity of having a *bonâ-fide* fire service congress, in which the Exhibition and the Tournament should only have figured as useful addenda. As it was, the Tournament took precedence, then came the trade exhibition, and the private conferences were quite of a supplementary character. The gathering at Amsterdam last year was the nearest approach to a useful congress, but there the practical demonstrations and exhibitions were entirely wanting. We trust that the next time the National Fire Brigade Union attempts a similar gathering, a combination of the advantages of the Amsterdam Congress and our London Tournament will be considered.

It may be added that the Chief Officer of the Metropolitan Fire Brigade, Captain Simonds, is the President of the National Fire Brigades' Union, and participates actively in its work. Lieut.-Colonel Seabroke is the Chairman, and the secretarial duties are entrusted to Mr. Folker. Messrs. Dale & Reynolds were the contractors at the Agricultural Hall, and the profits of the Tournament will to a great extent benefit the widows' and orphans' funds of the Metropolitan Brigade and the National Union.

CAMBRIAN ARCHÆOLOGICAL ASSOCIATION.—The annual meeting of this society will take place at Aberystwith during the week commencing September 17. A local committee is in course of formation, of which Mr. Dd. Samuel, M.A., has been appointed secretary. It being the celebration of the jubilee of the Association, more than usual interest is being evinced in the forthcoming meeting. The evening meetings will be held at the University.

NATIONAL ASSOCIATION OF MASTER PLUMBERS.—The first annual meeting of this Association will be held at the Albion Hotel, Ludgate-circus, on Tuesday next at 3 p.m. We are asked to state that any *bonâ-fide* master plumber will be welcome to attend, on production of his card or on the introduction of a member this week.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

PRESENTATION OF THE ROYAL GOLD MEDAL.

THE last ordinary meeting of this Institute for the present session was held on Monday last at 9, Conduit-street, Professor Aitchison, A.R.A. (President), in the chair.

The decease of Mr. Henry Crisp (Fellow) was announced.

The President then said:—

BROTHER ARCHITECTS, LADIES, and GENTLEMEN,—The two first public duties I have to perform, since you did me the honour of electing me as your President, are both agreeable. The first is to thank in your name the past President, Mr. Penrose, whom we may appropriately call "Athenian," for the dignity he has added to the office, and for the great aid he has given to the Institute. There is no civilised country in which his name would not be received with acclamation, not only for his talents and learning, but for having settled for all time the optical refinements employed by the Athenian architects. My nex duty is no less pleasant, for it is that of pre senting, in your name, the gold medal of her Majesty the Queen to Mr. Ernest George. This Gold Medal evening is always delightful, for it not only honours one of our craft, but it reminds us all of the gracious interest her Majesty takes in the fine art we cultivate and profess. The Sovereign is necessarily proud of those enduring monuments built during her reign that give fame and dignity to the country she governs, and whose style will bear her name. But with that largeness of mind that so distinguishes her, the gift of this medal is not confined to the distinguished architects of her own country, but to those of the world; and her benevolence does not even stop here, for she bestows it also on those who have aided our art by their investigations, their researches, or their eloquence. It is no small honour to be nominated by our brother architects to take a place in that roll of fame in which, to exclude the living, the names of Hittorff, Lesueur, Viollet-Le-Duc, Von Klenze, Lepsius, Von Ferstel, Von Schmidt, Von Hansen, Louis Duc, Cockerell, Barry Scott, Pennethorne, and Street are emblazoned, not to speak of Willis, Fergusson, Schliemann, and César Daly. We are too apt to think that building alone counts, forgetting Horace's maxim:—

> Many, many have lived, who were valiant in fight,
> Before Agamemnon; but all have gone down,
> Unwept and unknown, in the darkness of night,
> For lack of a poet to hymn their renown.

Had it not been for Vitruvius, how many of the architects of Greek buildings would be unknown! We have still the great Pantheon of Rome, but the name of its architect is lost; and were it not that Rabirius was a friend of Martial's we should not know the name of the architect of Domitian's palace. How many of the great Romanesque and Gothic buildings were built by nameless architects. We do not even known the name of the architect of so late a building as the cathedral of Seville. To so modest and retiring a man as Mr. Ernest George, whose practical motto is "Deeds not words," my silence about his works would have been more agreeable. But the reason of your choice has to be given to our brother architects abroad, to whom the name of Ernest George is not a household word, and whose eyes are not continually feasted with his works. He was articled to Mr. S. Hewitt, of Buckingham-street, Adelphi, in 1856, who died young, and he afterwards went for a few months into Mr. Boulnois' office. He became a student at the Royal Academy when he was nineteen, and at twenty he carried off the Royal Academy Gold Medal. At twenty-two he began practice with Mr. Thos. Vaughan, and continued for ten years until his partner's death; and among the works of this time Rousdon, in Devonshire, was built for Sir Henry Peek, as well as No. 36, Piccadilly, for Messrs. Sotheran. He was then joined by Mr. Harold Peto, and it was during this partnership that many of his important works were done. For the last three years, since Mr. Peto retired through ill-health, he has been joined by Mr. Yeates. His work has been almost wholly domestic; he has been engaged on no public buildings, and his church work has been confined to a few small churches, two of them in the Engadine. He has been a most diligent etcher and water-colour artist, and has illustrated his travels and studies in France, Belgium, and Italy with the needle; it is not, therefore, to be wondered at that so many of his executed works have a quaint flavour of French, Flemish, and Italian work, as

well as of English. To give a list of his works would be like Homer's catalogue of the Greek fleet at Troy, but the following are some of the most important :—Rousdon, Devonshire, with its cottages, farm buildings, church, and schools; Buchan Hill, Sussex; Stoodleigh Court, Tiverton; Mr. Mitford's house, Batsford Park, Gloucester, as well as the Town Hall, at Moreton-on-Marsh, he had built in memory of Lord Redesdale; Dunley House, Dorking; Rawdon House, Herts; Shiplake Court, on the Thames; Motcombe, Dorset, for Lord Stalbridge; Glencot, near Wells; East Court, Ramsgate; the Coffee Tavern, Newark, on the scale of a town-hall; additions to North Mymms and to West Dean, Chichester, and his works in London. Although I am only the spokesman of the Institute, I thought the members might expect me to say something on my own account of the works of Mr. George. I am not sure whether it was his design at the Royal Academy for the Duke of Wellington or Sotheran's shop in Piccadilly that first drew my attention to the originalty of his work; but now every architect who has visited Cheapside knows Cow, Hill, & Co.'s shop, and no private building in London is better known than his Albemarle Hotel, or his shop of Goode's in South Audley-street; while whole parts of London, such as Mount-street, Collingham and Harrington-gardens, and parts of Chelsea owe their picturesque charms to his hand. I may here mention a terra-cotta fronted house at Palace Court, Bayswater, whose elegant simplicity is worthy of all praise. Through his kindness I have been allowed to see the insides of Mr. Salting's and of Mr. De La Rue's house, which exhibit the same originality as the outsides, and greater elaboration, even to the locks and hinges; Mr. Salting's house is palatial, the hall having monolithic columns of marble, and its walls lined with the same beautiful material; Mr. De La Rue's house is on an irregular site, and is full of all the picturesqueness of Elizabethan, but with elegant instead of coarse carving. Although it is a great honour to be enrolled amongst this list of the great architects, architectural historians, and archæologists of the latter half of the nineteenth century, this choice of you, sir, to take your place amongst them has been spontaneous, for you are looked upon as the one who has been most instrumental in helping modern London to become one of the most picturesque cities in the world. I now beg, in the name of your brother architects, to hand you the Royal Gold Medal, with the hope that you may live long and happily to enjoy the distinction it confers.

Mr. Ernest George in reply said :—Mr. President and Fellow Craftsmen, It is with pride and gratification that I am elected by you to the honours of the Royal Gold Medal, which has been received in times past by many distinguished men. To me the charm of this medal is that, with her Majesty's gracious sanction, it is the gift of one's brother artists, and it is by these one would always wish to be judged. I gratefully accept the compliment as a mark of your kindly feeling, and of your willingness to judge leniently, recognising perhaps the good intention, rather than the imperfect result which all workers are conscious of. I thank you personally, Professor Aitchison, as you newly take that chair, adding to the list of courteous presidents, that you, an accomplished critic and expert in house building, should have found such kind things to say about me, almost seeming to justify the award that has been made. I am elected on the ground of my "executed works," and this gives me the opportunity to acknowledge the shares that others have had in my works, also the pleasure and help I have found in partnerships. My good friend, Mr. Alfred Yeates, has been my companion for the last three years; and for fifteen years prior to that time, Mr. Harold Peto was my very able colleague. He was not a draughtsman, but he had all the feeling of an artist, and to his originality of thought, soundness of judgment, and refinement of taste, he added also a capacity for the conduct of affairs that cannot be divorced from the practice of our craft, with its many sides. I feel that I have had a "good time," and have been allowed to work quietly, sheltered from many of the worries that disturb single-handed men. My first good partner, Mr. Thomas Vaughan, who began with me when we were fellow-students of the Royal Academy, received the Soane Medallion and Travelling Studentship of the Royal Institute. I feel how valuable is the work of the Institute in stimulating competition for prizes—and valuable prizes—that give the student means of travel and of study, with leisure from draughtsmen's work. There are objections to competition, but without it the greatest effort is seldom called forth. The number of competitors for our medals is a proof that the rewards are valued. I may assure our young men and competitors that infinite trouble is taken to decide justly and fairly in these competitions, although it is often impossible to prove which of two designs is distinctly the better, with the various merits and faults of each. To my young friends I strongly commend this struggle for prizes—although, Mr. President, I am delighted to accept my medal without having to work for it. It is my sincere hope that most of my friends in this room feel with me that ours is, perhaps, the happiest of callings. We may not gain credit for great originality, and yet in each essay there is an effort at invention and creation; and there is the after pleasure of realising our schemes—however imperfect—on a nice big scale: a result so much more tangible than that enjoyed by the painter, or even the sculptor. These latter, however, are wholly responsible for their works, and may do what they please; whereas, with ourselves, in our works, especially in house building, there is the very important factor of the client—he who pays for the house and is to live in it, and must in fairness be allowed his part in the scheming of it. If there are points in which his wishes differ widely from our own, a compromise is probably made; but we cannot record on our building that this or that treatment was not in accord with our judgment, but was a concession to the wishes of the owner. I suppose we have all known the distress of revising a scheme to its detriment, and having to do that which we knew to be second best. Yet the client, who may come with prejudices, is generally kind and considerate, and is willing to be led by fair argument. How dull and monotonous our buildings would be if they were all turned out to our own fancy, and if there was no client, with his distinct wants and wishes, to help in the shaping of them, imparting some individuality to each work. His wants should have the most careful consideration, even when at first they seemed opposed to our own views of what is best. He should have his voice in the arrangement and in the choice of style and treatment, but he should be wiser than to worry his artist in matters of purely architectural detail. I have spoken of the client in the masculine, but we find that women are among the most enterprising or intelligent of builders, and their judgment, sense of fitness, and refinement of taste is often most helpful to the architect. Among the pleasantest times that come to us I would count the visits to works when finished, if there are no smoky chimneys. To enjoy hospitality in a house of our own making, to shut our eyes to the points that might have been better, and to hear kind things said about our efforts, is a gratification to our vanity, and is a small compensation for the many experiences that make self-laudation impossible. With those of us who enjoy doing our own work, not employing "ghosts," we make plans, elevations, and details, and draw our full-size mouldings—probably doing everything that we think interesting. Yet, for the efficient working of the whole scheme, how much depends on those who in the "draughtman's office" carefully elaborate the plans of footings, plans of roofs, the direction of flues, the exact spacing of stairs, and innumerable details—many of them not interesting, but on which the comfort of the house so largely depends! After a fair term of practice it is a pleasure to think of the many able young men of the past and present who have been associated with us. It is gratifying, too, to find how many are already getting work to do on their own account, and doing it well. Our occupation is a handicraft, the hand and the eye working together with, we hope, some assistance from the head; and I believe there is more fascination about such work than about that which is purely intellectual. I should be sorry if an architectural union could forbid our working beyond seven hours a day. We have good professional excuses for happy holidays, and I have always felt that to leave one's drawing-board and see two or three marble cities in Italian sunshine, or to look on the big brick towers of a Hans town, was profitable and refreshing, and some safeguard against monotonous production. In art I believe strongly in the advantage of youth, with its power and freshness. I have long ceased to be young, but I endeavour to believe in our branch of art, architecture; an increase of experience means increased knowledge and a sounder judgment, and these should be a help to the designer. I persuade myself that an architect need not become effete at an early age, and that he may keep to his work while his hand retains its cunning. For most of my life I have been a member of the Institute, but I have never trespassed on its time before, and I am not likely to do so again, so I must beg your kind forbearance now. Mr. President, and my brother architects, I give you my very hearty thanks for the honour you have been pleased to do me to-night.

The President said, after looking round at Mr. George's drawings, he had nothing to add after his reply, except to paraphrase the inscription to Wren in St. Paul's. If his hearers had any doubt as to Mr. George's merit, he would merely say, "look around."

Mr. A. S. Flower remarked, in describing the drawings exhibited on the walls, that Mr. George had sent so many of his sketches that they had scarcely required to draw upon the resources of the Institute. But they had also brought out from the collections of the library some of the so-called buried treasures. A good many suggestions had reached the Library Committee that many drawings hidden in their cases were not sufficiently known or appreciated, and a sub-Committee was appointed with a view to inspecting the drawings, and making them of more use to the members. That sub-Committee had spent a good deal of time in going through the drawings, the result being that a great many had been cleaned and mounted. Those exhibited on the walls were by no means the only treasures, but merely a selection of what were inside the cases for the use of any who took the trouble to look at them. One of the drawings, a design for the dome of Greenwich Hospital, might fairly be considered an autograph of Sir Christopher Wren, though not signed by him. Around were grouped some drawings by Mr. Sayer of Wren's original design, and a water-colour sketch was by Malton of the south transept of St. Paul's. Above was an interesting drawing of the ball and cross of St. Paul's, taken some years ago; as also some sketches of St. Stephen's, Walbrook. Then came some drawings by Sir William Chambers, with the original details for Somerset House, besides others of the older buildings. On the other side of the room were drawings of York Watergate, designed by Inigo Jones, though the drawings were not of contemporary date. On one of the screens were to be seen original water-colours by the great antiquary, John Carter, done about 100 years ago, and showing a wonderful knowledge of Gothic detail for the time. There were also sketches of classical ornament by Decimus Burton; and designs by Donaldson. In the inner library would be found several restorations of Rome, and on the tables were exhibited interesting old drawings of stained glass, by the little-known artist, William Fowler, of Winterton in Lincolnshire; besides a collection of drawings of Roman mosaic pavements. In another room would be found a collection of restorations of Old St. Paul's, carefully worked out from Hollar's account, also several curious drawings from Cape Coast Castle of ordinary native buildings, closely approximating to Egyptian architecture. There would also be found several fine sketches of Canterbury Cathedral by Ernest Lee. These exhibits were simply typical of what was to be found in the Institute's collection, which was accessible at all times.

The President announced that these drawings would be on exhibition for a week. He added that the Council had decided to extend the present session, and that a special general meeting would be held on Monday, July 6, for the purpose of announcing the names of candidates recommended by the Council for election as Fellows.

The proceedings then terminated.

VICTOR EMMANUEL MONUMENT AT MILAN.

THIS week the new equestrian statue to King Victor Emmanuel has been unveiled at Milan on the occasion of the thirty-seventh anniversary of the battle of San Martino. We reproduce a photographic view taken from the model, of which the deceased Professor Rosa was the sculptor. The position of the monument is on the great market-place at Milan, facing the main cathedral front, and certainly no monument could have had a better position accorded it. The ceremony of unveiling was to be attended by the King and Queen of Italy, and the importance given to the event can be judged by the fact that tribunes for no less than 2,000 visitors have been erected. We take the opportunity of pointing

THE NEW VICTOR EMMANUEL MONUMENT AT MILAN.—THE LATE SIGNOR ROSA, SCULPTOR.

out that much is being done for sculptural art at Milan, which has but lately had a fine equestrian statue given it in form of a memorial to Garibaldi.

Some of the excellent sculptural work which is now to be seen in the new central cemetery will be the subject of a future article.

CONGRESS OF FRENCH ARCHITECTS.

THOUGH organised, as usual, by the "Société Centrale des Architectes Français," and holding its meeting in Paris, the Congress of 1896 has devoted a great portion of its discussions to provincial requirements. Few special subjects have been set down in the programme by the Société Centrale, because the Société has desired above all things the discussion of the work of the "Commission Intérieure" for studying the question of architectural education in the provinces, and its proper development and organisation. Thus the two sittings of Monday the 15th, morning and afternoon, and a third sitting on Tuesday the 16th, were devoted to this subject of "Enseignement Régional de l'Architecture."

At the meeting of Monday morning M. E. Corroyer, Vice-President of the Société Centrale, occupying the place of the President M. Garnier, who was absent through illness, welcomed the members of the Commission, and M. Boileau, Principal Secretary of the Société Centrale, recounted the circumstances attending the nomination of the Commission and the fixing of the place and time for its meetings. Thirty-five delegates, representing thirty societies, were present, being half the full number of delegates, but representing three-fourths of the Societies included. The Commission appointed the following as its "bureau": M. Roussi (Paris), President; MM. Laloux (Paris), Lefort (Rouen), and Batteur (Lille), Vice-Presidents; M. Blondel (Versailles), General Sectetary; and M. Hermant (Paris) Assistant-Secretary. The Commission then commenced its proceedings by hearing two papers; one a personal communication by M. Besnard, of Soissons; the other an official communication from the Society of Bouches-du-Rhône. A third memoir, from the Academie Society of Architecture of Lyons, was at this time only referred to a sub-committee.

M. Besnard recommended the establishment of three distinctly classified degrees in architectural education: "Enseignement Supérieur," represented by the Écoles Nationale des Beaux-Arts, "Enseignement Secondaire," represented by the proposed "Écoles Régionales" to be founded in a small number of the principal towns; and "Enseignement Primaire," to be organised wherever it seemed desirable or possible. M. Besnard has moreover studied a geographical division of France, indicating the positions of the Écoles Secondaires and the Departments among which they should be distributed.

The memorial of the Society of Bouches-du-Rhône demanded also the formation, in some principal centres, of "Écoles Régionales" of architecture on the basis of some which exist already in an initial stage; the assimilation of these schools to the second class in architecture at the École Nationale des Beaux-Arts; the conferring of a certificate on those who had passed through the course of instruction in these schools, together with immunity from two years of military service and the right to enter the first class in the École des Beaux-Arts at Paris.

After a long discussion which occupied all the afternoon sitting on the Monday, the Commission appointed a sub-Committee consisting of MM. Pangoy (Marseilles), Galinier (Toulouse), Labbé (Bordeaux), Bellemain (Lyons), and Lombard (Marseilles); and this sub-Committee, having passed the morning of Tuesday the 16th in considering the various documents presented, submitted to the full meeting, at 4.30 on the same day, a report drawn up by M. Lefort, and terminating in various resolutions which, after discussion and amendment, were carried almost unanimously, and may be summarised as follows:—

1. The establishment, in a certain number of schools in the Departments, of a section constituting a Special School of Architecture, with examinations at entrance and on leaving, and conferring a certificate of ability.

2. Final examinations equivalent in difficulty to the competitions entered into by the pupils of the École des Beaux-Arts of Paris for passing from the second into the first class.

3. The right of a pupil who had passed these examinations to enter the first class of the École des Beaux-Arts, and to dispense with the two years of military service.

4. The necessary powers to be granted to the Commission to transmit its resolutions to the public bodies concerned and to provide for their realisation.

At the afternoon sitting of Monday the 15th, at 2 p.m., in the Hemicycle des Beaux-Arts, M. Achille Hermant, Vice-President of the Société Centrale, opened the Congress in the name of M. Ch. Garnier, and appointed the Presidents of the provincial societies present as additional Vice-Presidents.

The first subject for discussion, proposed by the "Caisse de Defense Mutuelle," was as follows:

The rights of the proprietor (called in England the "building-owner") over the plans and other documents which constitute the contract between employer and contractor:

The rights of the architect in regard to the notes and sketches ("minutes des projets") drawn up by him for the proprietor:

And the ultimate rights of the architect in regard to the contract drawings and documents.

A general discussion, at times a very animated one took place, especially between M. Harmand, Advocate in the Paris Courts, and M. Gosset, Advocate of the Council of State, and in which a considerable number of the architects present took part.

M. Gosset, treating the subject from the point of view of law and jurisprudence, maintained (1) that an architect commissioned to carry out a building, who had completed his work in that respect and received his fees, had no further duty whatever to his client beyond what was involved in the system of ten years' guarantee: (2) that no architect is obliged to preserve the data necessary to produce copies of his original plans, sections, and elevations, and other drawings which have served for the carrying out of the building: (3) that an architect is not a notary charged with the custody of documents and liable to give them up when called upon; and (4) that if an architect has preserved the original drawings, &c., he is not compelled to give them up either to the proprietor or to his heirs or legal representatives, but can demand payment for doing so.

To summarise: all question of legal rights as between the architect and his former client having been effaced after the full payment of the architect's fees, the mere fact of the possession by the architect of his drawings and memoranda gives him the right to retain them and to make a charge for them if demanded.

M. Harmand, speaking more especially from the "artistic copyright" point of view, but agreeing in the main with the previous speaker, proposed the following resolutions, the vote for which closed the discussion:—

1. The architectural drawings—plans, elevations, sections, and details of execution and of decoration, constitute collectively the original of the architectural work and remain the property of the architect.

2. The building actually erected is only a reproduction of the original design, consented to by the architect in favour of the proprietor, his client; the architect only transfers to the proprietor the use of his architectural conception in this instance.

3. The architect remains owner of all the drawings made by him; he owes the client nothing but to forward to him the signed copies of the plans.

4. It is desirable in the interests of artistic education, that both architectural students and the public should be at liberty to study and make drawings of any executed works of architecture, but such copies are not to be reproduced or multiplied for any commercial or industrial purpose, without the consent of the author, until the period of legal protection has expired.

Before touching on the numerous visits that were made during the Congress to buildings and places of interest, a word should be given to the lecture delivered by M. Augé de Lassus on "Architecture in Portugal from the Roman Period down to Modern Times." This lecture, illustrated by numerous lantern views, brought before the audience (which included a number of ladies) the most remarkable buildings of Portugal, from the temple of Diana at Evora to the modern buildings erected at Lisbon since the earthquake of 1755, some of the later of which are the works of an eminent architect recently deceased, the Chevalier de Silva. The lecture was a great success not only in regard to the information conveyed in it, but from the interesting and piquant style which pervaded it.

Besides the special excursion to Reims, the visits made in Paris were more numerous than on previous occasions. On Monday the 15th, at 9 in the morning, a visit was paid to the Greek church in Rue Bizet, recently opened, of which M. Vaudremer was architect; a building which displays a striking combination of rich decoration with simplicity of general design and construction, and in which the decorative paintings by M. Lameire, in the dome, were especially admired. On quitting the church, the party made a short halt in Rue Galilée, to look at the "Maison à Loyer," No. 24, designed by M. Paul Sédille. M. Boileau then invited the company to inspect the hotel for the Comte de Montebello at No. 10 Rue Hamelin, the decoration of which is just being completed, where they admired the façades of the entrance and on the garden front, the staircase in red pine "teinte comme certains escaliers d'habitations anglaises,"* and the decoration of the reception-rooms, still in course of execution.

The great event, however, was the visit to the Hotel of Prince Roland Buonaparte between the Avenue d'Iena and the Rue Fresnel, designed by M. Janty, and of which the owner himself did the honours.† The ingenious planning of the Service Court on the Rue Fresnel side, the large reception-rooms, the private apartments in which are preserved some of the finest statues which had belonged to the first Napoléon, and the admirably planned library with its one hundred and thirty thousand volumes, were the principal points to be remarked on in this splendid house, which has cost three million francs.

On the afternoon of Tuesday, the 16th, the members repaired to the Boulevard Berthier to see one of the last works carved out by M. Garnier, the new "Magasins" for storing the scenery and decorations of the Opéra and the Opéra Comique. M. Garnier unfortunately was still too unwell to attend, and in his absence MM. Cassien-Bernard and Renaud conducted the party over the building. Though the architectural treatment is exceedingly simple, a certain effect has been obtained by the contrast of materials—coursed stone, rubble-work, and brick; and every precaution has been taken to render the interior construction proof against danger from fire. The building represents the versatility of M. Garnier's talent in a new light.

Reference has been made more than once in the *Builder* to the large building or collection of buildings by M. Scellier de Gisors, erected as a depot for the storage of *matériel* for the Post and Telegraph service, which was visited by the members on the morning of the 17th. After visiting this building, which we have already sufficiently described, the members proceeded by the Ceinture Railway to visit the new church of St. Anne, in the Rue Tolbiac, of which the nave only is at present completed; M. Bobin, as already mentioned in our columns, is the architect. The same day, at 4 p.m., the party visited M. Nénot's great building, the new Sorbonne, which has been largely illustrated in our pages, and the plan and arrangement of the building fully described. The party on this occasion were especially struck with the elaborate and carefully-studied arrangements in the rooms and theatres devoted to scientific work, on which the architect was highly complimented.

Thursday the 18th was entirely devoted to the visit to Reims, which was conducted by M. Lamy, President of the "Société des Architectes de la Marne," to whom and to other members of the same Society the visitors were much indebted for their assistance. The excursionists, to the number of 120, successively visited the Roman triumphal arch, one of the most important but unfortunately also one of the most dilapidated of the Roman monuments in France; the Hôtel de Ville, part of which dates back to the time of Louis XIII. and the pediment of which encloses a statue of that monarch; the Maison des Musiciens, in Rue de Tambour, with a façade of the fourteenth century restored in the sixteenth century, and having five life-size statues of musicians playing on different instruments; a hôtel in the Rue de Marc decorated internally with a splendid Late Mediæval wooden painted ceiling; the Market Place, with its carved wooden façade of the close of the fifteenth century; the Place Royale; the theatre, one of the best modern works of its class, by M. Alph. Gosset; the Cathedral, with its treasury and the Archbishop's house, where the party were conducted by M. Davy, the diocesan architect; the Library; the General Hospital; the Pomery

* We do not quite understand what kind of treatment our correspondent alludes to.

† The drawings for this remarkable Paris mansion were exhibited in the Salon, and were alluded to and briefly described in our article on "Architecture at the Paris Salon." (*Builder*, May 16, 1896).

cellars, the great champagne store-houses; the mills for the manufacture of "Ciment Volcanique;" the church and tomb of St. Remi, to which unfortunately very little time could be given; the cloisters of the Hôtel-Dieu, and lastly the fine collection of pictures belonging to M. Vannier, and including some of the best works of Diaz and Corot. This exceedingly well-filled day closed with a dinner, at which the bronze medal of the Société Centrale was conferred on a worthy mason of Chalons-sur-Marne, who had been for many years foreman in a large establishment.

The morning of Friday the 19th was devoted to the "Caisse de Defense Mutuelle," which now numbers 463 members and twenty-three adherent Societies. It has taken up more than two hundred cases, to forty of which it has given pecuniary aid in carrying out legal proceedings, in many cases with success.

At the afternoon sitting of the same day M. Martinez, civil engineer, read a paper on a special cement, "Ciment armé"; M. Ledoux, decorative painter, executed during the sitting some decorative designs in graffito with the same material, and also in colour; and M. Deneux read a remarkable and far too short paper on the various forms of encaustic painting which had been practised in antiquity, and the possibility of reviving this art in the present day. Lastly M. Bérard, architect, exhibited a design for a triumphal arch over the Seine in "ciment armé" and M. Manduit exhibited the metallic decoration which this kind of bridge could receive, consisting in part of repoussé leadwork. After the meeting a number of members repaired to the residence of M. Morin, Rue de Babylone, one of the managers of the "Magasins du Bon-Marché," where M. Marcel, architect, had designed a very curious reception-room in Japanese taste, in the decoration of which squares of opaline, carved wood, and terra-cotta are intermixed, producing an unusual and piquant effect, especially when lighted by electric light.

On the Saturday, the closing day of the Congress, M. Pangoy presided, and some formal reports were gone through in regard to the Committee for examining into provincial architectural education, the "Caisse d'Assistance Confraternelle" and the "Caisse de Défense Mutuelle." This closed the business proceedings of the Congress, and some members visited a church built with the before-named "ciment armé" from the designs of M. Albert Leclerc, and also inspected a large business building in progress in the same material.

At 1 p.m. the distribution of awards and honours ("récompenses") took place. M. Charles Yriarte presided, and among the recipients of honours who were most applauded were M. Heret, honorary architect to the city of Paris (medaille d'honneur); M. Albert Ballu, architect to the department of "Monuments Historiques" and acting for them in Algeria (medal of archæology); M. Albert Mayeux, pupil in the École des Beaux-Arts; MM. Thiebault *frères*, metal-founders; M. Chapelle, contractor in masonry; and M. Burteau, foreman worker in marble.

In the evening of Saturday M. Ch. Garnier presided at the usual banquet at the Hôtel Continental, where more than one hundred and fifty assembled. M. Garnier was supported by M. Chas. Yriarte and M. Achille Hermant. The menu card, a special and very original design by M. Binet, received great approval, as well as the toasts proposed by M. Garnier, M. Yriarte, M. Borleau and others.

On the whole it may be said that this congress, which showed the largest attendance for twenty-three years, was remarkable also for the number of visits and the novelty of the subjects treated.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, at the County Hall, Spring-gardens, Sir Arthur Arnold, Chairman, presiding.

Loans.—Upon the recommendation of the Finance Committee, it was agreed to lend the Poplar District Board 2,400*l.* for paving works; the Westminster Vestry 10,200*l.* for paving and other works; the St. James's Vestry 8,350*l.* for similar works; and the Shoreditch Vestry 1,900*l.* for the purpose of constructing an underground convenience.

Tramway Purchase.—The Council proceeded to the consideration of the report of the Highways Committee with reference to the tramways of London. In the first place, the Committee recommended the Council not to accept the proposal of the County of London Tramways Syndicate to lease the tramways from the Council at a rental estimated at 200,000*l.* a year. This recommendation the Council adopted without discussion. The Committee's report went on to state that the North Metropolitan Tramway Company had offered that they should purchase the undertaking of the London Streets Tramway Company, sell that and their own system to the Council for 437,000*l.*, and then acquire them upon a fourteen years' lease at a rental of 45,000*l.* a year. This, it was estimated, would produce a return of 8 1-3 per cent. per annum on the capital outlay, while the Council would be able to borrow at two and a half per cent. At the expiration of the lease the Council would have received by way of fixed rent and percentage of receipts a total sum of about 708,000*l.*, of which about 142,000*l.* would have been applied to reduction of debt, 165,000*l.* to payment of interest on loan, and 401,000*l.* in relief of rates. The Committee recommended the Council to adopt a provisional agreement on these lines.

To this Mr. Baker moved the following amendment:—

"That the report be referred back to the Highways Committee, with instructions to report for the purpose of comparison as to the probable profit to the ratepayers if the Council itself worked such portions of the northern system of tramways as will be within its control after 1898, information being given upon the basis of horse traction, and also electric traction or other approved mechanical means."

He explained that among European nations Germany has about 447 miles of electric or other mechanical traction, while France has 116 miles, Italy eighty-one miles, and England only forty-nine; that there are some 15,000 miles in the United States and Canada; that Hanover has a greater mileage of tramways in proportion to its population than any other city on the Continent; that Hamburg was the first city in Europe to have the whole of its service converted to electric traction; and that the enterprising Corporation of Birmingham had decided upon an electric system for that city. He held that the earning power of a tramway might soon be doubled by the adoption of the improved systems of traction now in the market.

The amendment was seconded by Mr. Lyon, and after a prolonged debate was agreed to.

Strand Widening, Holywell-street. — The adjourned report of the Improvements Committee was brought up. The Committee recommended, in reference to the proposed widening of the Strand at Holywell-street *:—

(*a*) That the Council do apply to Parliament in the session of 1897 for powers to remove the block of buildings on the south side of Holywell-street, and between the churches of St. Mary-le-Strand and St. Clement Danes, as shown in full red colour on the plan approved by the Improvements Committee on June 3, 1896.

(*b*) That provision be made in the Bill for part of the cost of the improvement to be dealt with on the same general principle as that embodied in the improvement charge sections of the London County Council (Tower-bridge Southern Approach) Act, 1895.

(*c*) That, as in the case of the London County Council (Tower-bridge Southern Approach) Act, 1895, a provision be inserted that improvements made in lands or premises after June 9, 1896, when the scheme was made public, shall not be taken into account in assessing compensation, if such improvements be made with a view to obtaining or increasing the compensation payable by the Council.

(*d*) That provision be made for the construction of a subway (for mains, wires, &c.), and also for the planting of trees in the widened thoroughfare.

Mr. Goulding, M.P., had previously moved, and Mr. Turton had seconded, the following amendment:—

"That, while approving of the proposal that the block of buildings in Holywell-street should be removed, the Council refers the recommendation back to the committee to consider and report without delay whether the improvement should not extend to the acquisition of the land north of St. Mary's Church (as described in the report of the committee), so as to render the scheme more complete, and also whether power should not be obtained at the same time for the Council to acquire the freehold and long leasehold interests in the land and buildings fronting on Holywell-street."

Mr. Emden supported the scheme. The improvement would not benefit the inhabitants of the Strand so much as the general public, in relieving the congestion of traffic.

Sir John Hutton thought all parties were agreed as to the necessity of removing this block of buildings, but he believed the Council would not care to bind itself to a future step by adopting the amendment.

Mr. Campbell considered the improvement was not urgent, and he strongly advocated the removal of the Church of St. Mary-le-Strand, which was out of place in its present position.

Mr. Goodman observed that if St. Mary's Church was in the way it should be removed to a more convenient spot. He was in favour of referring the report back with that view.

Colonel Rotton saw no reason for the improvement on the score of congestion of traffic, because there was an ample outlet for it by way of the Thames Embankment.

Dr. Longstaff supported the Amendment, pointing out that even if it were carried it would in no way wreck the Committee's scheme. As to the removal of the church, anyone who cared for the architectural adornment of London would not desire that.

Major Probyn pointed out that the Amendment would mean an increase of 140,000*l.* on the present cost of the scheme. The Royal Academy and the Institute of Architects had strongly deprecated the removal of the church, and their opinions were not to be ignored.

The Amendment was carried by a considerable majority without a division.

Mr. Ward moved a further Amendment, instructing the Committee to consider the advisableness of removing the Church of St. Mary-le-Strand.

Mr. Lyon seconded the Amendment, which Mr. Goulding described as a wrecking Amendment.

Mr. Benn urged the Council in no way to encourage anything which would tend towards the destruction of St. Mary's Church.

Mr. Rose Innes, who spoke amid laughter and constant interruption, said he considered the church one of the most hideous in London, and which did not contain a single tomb, and had no historical points of interest. The architect of the church had apologised for the ugliness of the building, and had explained that he had to build the turret out of the remains of materials which were intended for a statue of Queen Anne.

On a division there voted:—For the Amendment, 42; against, 57; majority, 15.

A division was called on Mr. Goulding's original Amendment as a substantive Motion, when there voted:—For Mr. Goulding's Motion, 40; against, 43.

The matter then dropped, and the Council adjourned.

* See our last issue, p. 532.

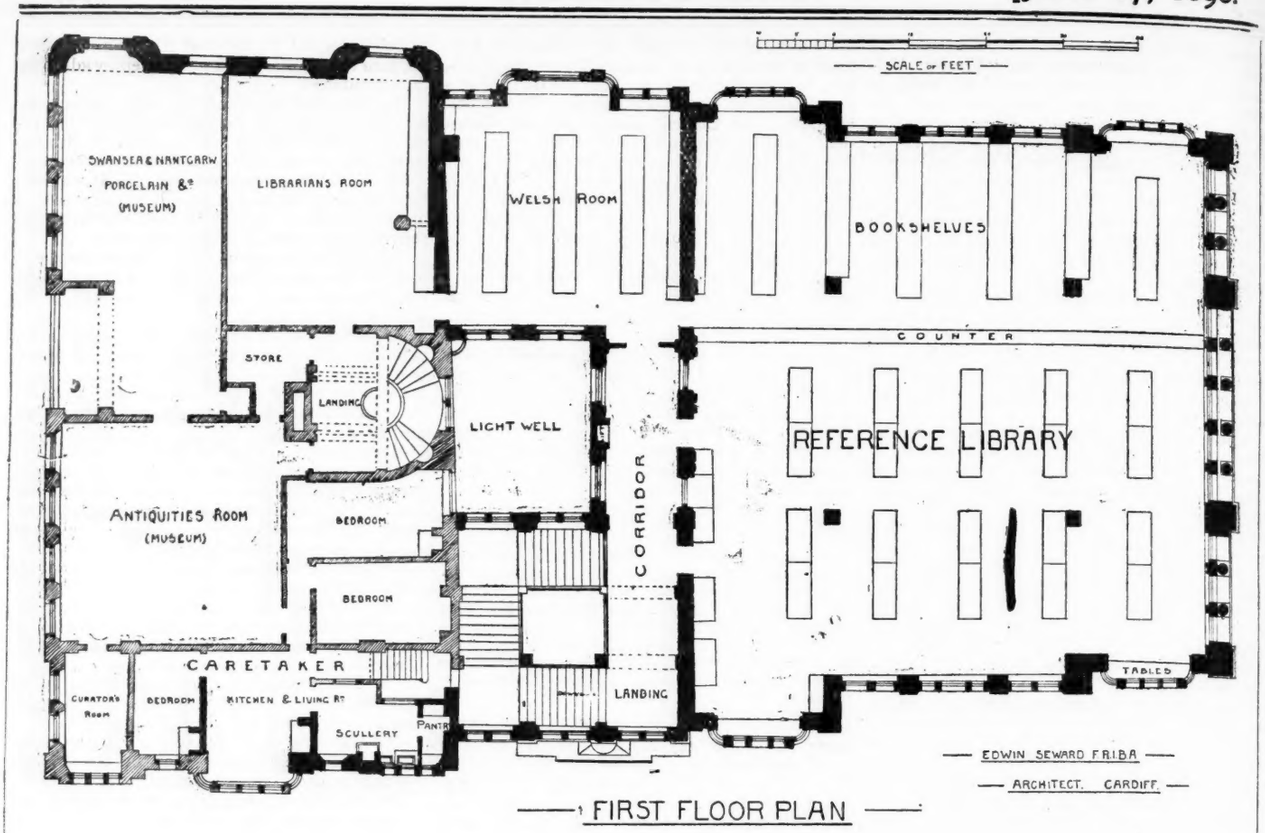
COMPETITIONS.

WORKHOUSE, DONCASTER. — On the 13th inst., at the fortnightly meeting of the Doncaster Board of Guardians, the new workhouse committee appointed to consider the plans, submitted their report, and recommended that the premiums should be awarded as follows:—First, No. 2, estimated to cost £30,980; second, No. 9, estimated cost £30,000 to £36,000, and third, No. 6, estimated cost £40,792. Mr. W. H. Ward, of Birmingham, had been called in to advise, and also recommended the adoption of No. 2, which was agreed to. The letters were opened containing the names, and were found to be as follows:—No. 2, Mr. J. H. Morton, 50, King-street, South Shields; No. 9, Mr. C. H. Channon, of Malton; No. 6, Mr. George Hirst Stanger, Wolverhampton. The premiums offered were £100, £50, and £20, and they were given in the order named. It was resolved to adopt Mr. J. H. Morton's plans.

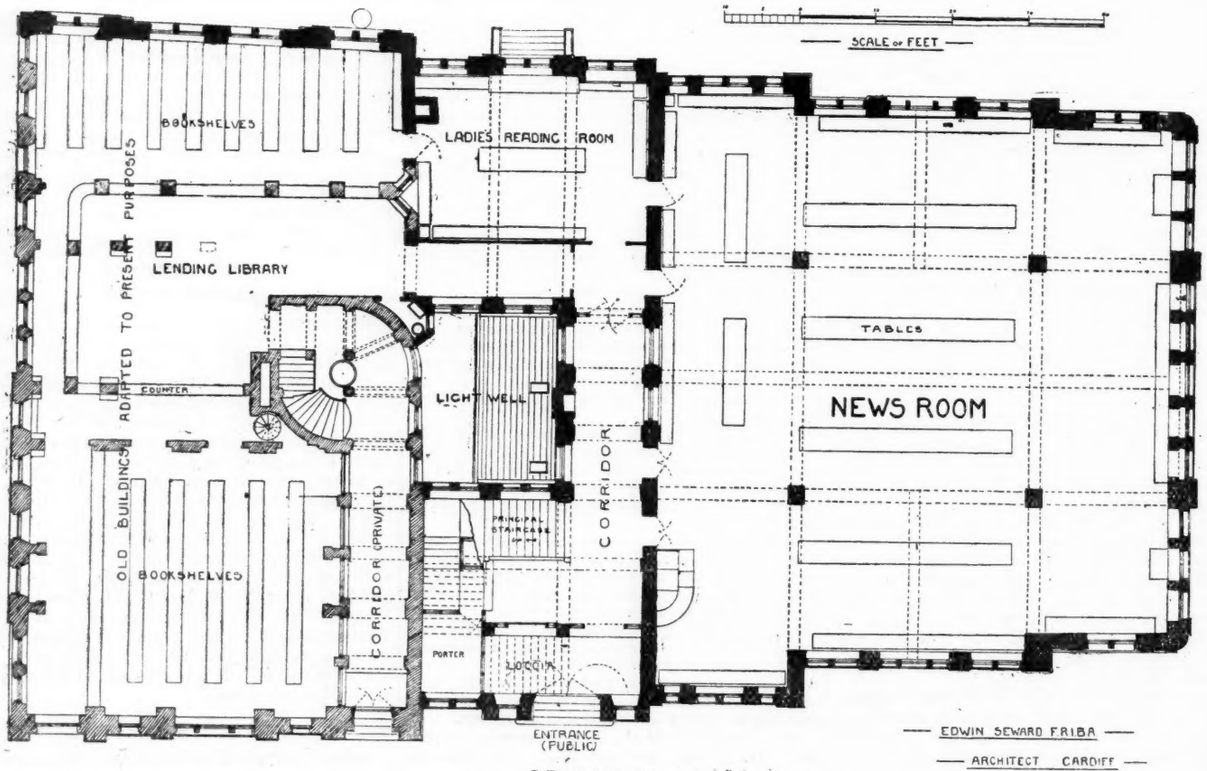
THE LONDON BUILDING TRADES DISPUTE.

THERE is very little to report this week in regard to the dispute in the London Building trades. As our readers are aware, most of the trades affected have already returned to work, and at present the only outstanding trades are the plasterers and the painters. The masons did not come out on strike at all, and they are still at work at the old rate of wages.

PUBLIC IMPROVEMENTS, HOYLAKE AND WEST KIRBY.—On the 17th inst., Mr. Rienzi Walker, M.Inst. C.E., held an inquiry on behalf of the Local Government Board, at the public offices, Hoylake, in respect to the application of the Hoylake-cum-West Kirby District Council for sanction to borrow 4,000*l.* for the completion of their offices and buildings, 1,500*l.* for sewerage works, and 294*l.* for works of private street improvements in Alderley-road, Hoylake.



FIRST FLOOR PLAN



GROUND FLOOR PLAN

Public Library, Cardiff.

Illustrations.

DESIGN FOR A BRIDGE.

THIS design was awarded the Tite prize of the Royal Institute of British Architects this year. It is designed to span a tidal river, the length and conditions being similar to the requirements of the proposed bridge in connexion with the long-contemplated new street from Holborn to the Strand. In this case, however, the embankments are intended for foot traffic only.

The large piers at the approaches are intended to commemorate particular national events, the conditions requiring the bridge to be designed "as a national memorial."

HENRY A. CROUCH.

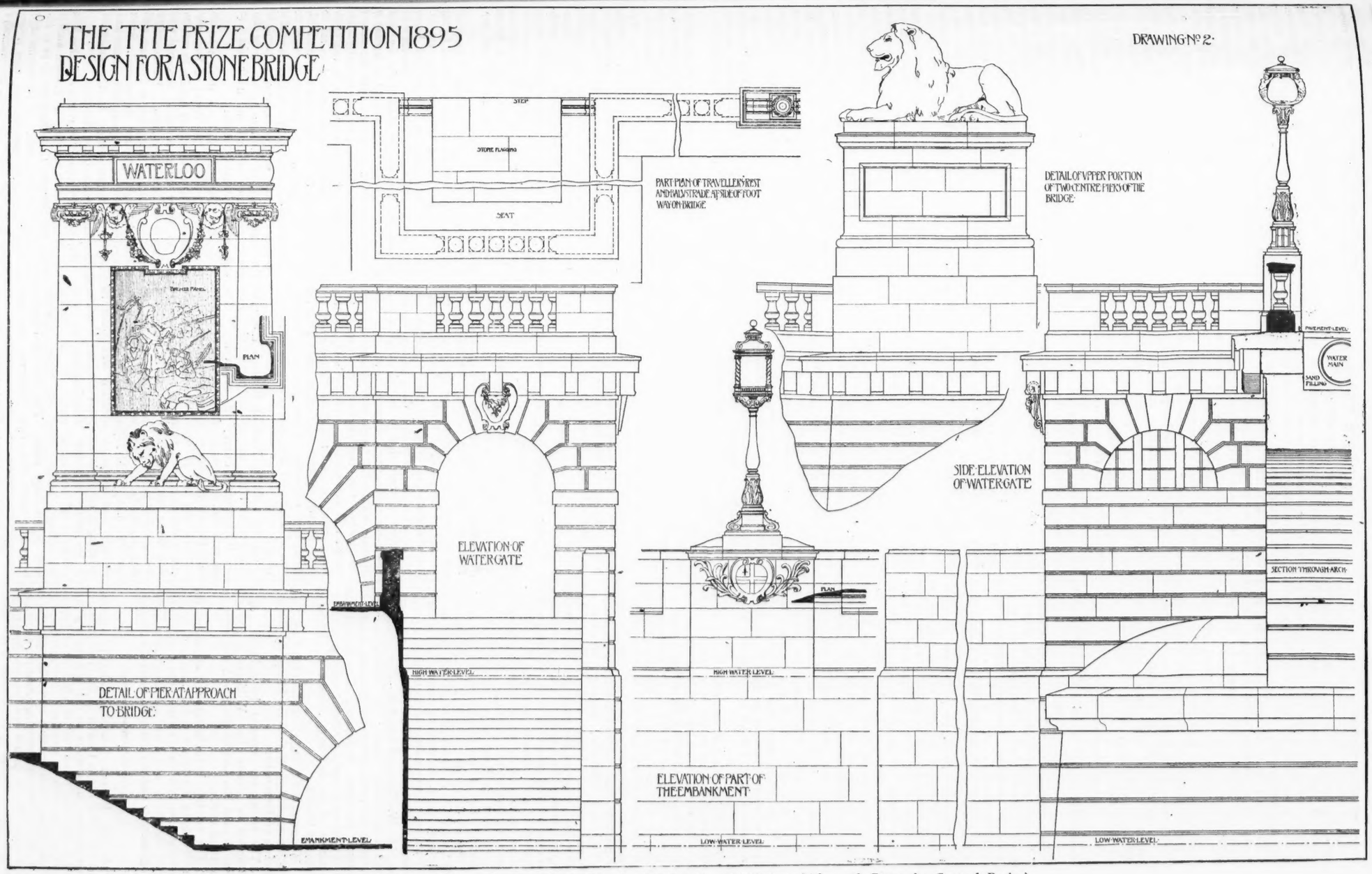
CHRIST CHURCH, NORTH BRIXTON.

THE design illustrated has been adopted by the Vicar and committee for the rebuilding of the present church, the site in the Brixton-road being enlarged by acquiring three adjacent plots. The new church will accommodate 1,572 persons, 1,000 of whom will be seated upon the ground floor and 572 in galleries in the transepts and at the west end. Internal columns and piers that might obstruct the view of the congregation have been avoided, and open lattice girders having a span of 45 ft. carry the galleries from wall to wall.

The church is mainly lighted from an octagonal central lantern, carried on simple pointed brick arches. Over the domical roof of the lantern a ventilating shaft is provided within the external cupola. The organ chamber is provided at the back of the church opening into the "west"

THE TITE PRIZE COMPETITION 1895
DESIGN FOR A STONE BRIDGE

DRAWING No 2.



Design for Stone Bridge: By Mr. H. A. Crouch, A.R.I.B.A. Details (see Lithograph Plates for General Design).

gallery. The galleries are reached by external staircases from the narthex.

A large parochial hall occupies the rear of the site and will be erected first, before the existing church is pulled down, in order to provide temporary accommodation for the congregation, and eventually will be subdivided into smaller halls and schoolrooms.

The materials to be used are London grey stocks with Portland stone dressings for the walls, and Whitland Abbey slates for the roofs and cupola.

Internally the walls will be covered with wood-panelling for nearly their whole height.

The roofs will be open framed, and the iron construction of the squinches of the octagon and of the galleries will not be covered up. The estimated cost of the church, with adjacent buildings, is 17,800*l*. The architect is Mr. Beresford Pite.

EXTENSIONS OF THE FREE LIBRARY, CARDIFF.

THE original Cardiff Free Library was completed fourteen years ago, but being found too small for its purposes, after some eight or ten years, the extensions recently completed were determined on.

The new portion consists, on the ground floor of a broad entrance corridor, a newspaper reading-room about 70 ft. by 70 ft., and a ladies' reading-room; on the first floor a spacious reference library and a well-lighted room containing the Welsh library, to which department the celebrated Welsh books of the late Sir Thomas Phillips have been recently added, making it the finest Welsh library which has yet been formed. The old portion of the building has been converted to lending library, file, and storage and administrative department, and the whole building is now one of the finest free libraries to be found in the provinces. The upper portion of the old buildings is in use as a museum, but a new Municipal Museum and Art Gallery is just about to be erected elsewhere from the designs of the architect of the Library buildings, Mr. Edwin Seward, F.R.I.B.A.

The library extensions are erected in Bath stone, with panels, &c., of yellow Ham-hill stone, relieved in places with white Portland stone. The building is covered with a flat roof of girders and cement, constructed by Mr. A. D. Dawnay, and finished with asphalte of the Asphaltic Concrete Co., Victoria-street, London. In the carving of panels, &c., the architect has introduced a series of printers' marks of the chief European printers —Füst and Schoeffer, Caxton, Wynkyn de Worde, Aldus, Plantin, Elzevir, De Giunta, John Day, Robert Estienne, &c. The Hayes front is crowned by a bust of Pallas Athené, the terminals being decorated with the owls as her attributes, and the arch tympanum below contains a figure of Literature, with figures representative of Caligraphy and Printing. Above it is the Welsh motto:—"NY BYDD DOETH NY DDARLLENO" (He will not be wise who will not read).

The entrance to the building is in Trinity-street, and is flanked by two figures of over life-size in Portland stone, representing Study and Rhetoric. These, with the remainder of the carvings throughout, were executed by Mr. W. Taylor, representing Mr. W. Clarke of Llandaff. The lobbies are laid with marble mosaic by Messrs. Bewick, Ward & Co., but the interior generally is finished plainly for future decorating. The fittings and furniture are in teak, manufactured by the contractors of the building, Messrs. E. Turner & Sons of Cardiff.

The electric lighting throughout has been done by Messrs. Strode & Co., the fittings by Messrs. Brawn of Birmingham.

The rooms are warmed by radiators, &c., supplied by Messrs. Jno. Williams & Sons of Cardiff, and Mr. Charles Shepherd has acted as clerk of works.

The building is to be formally opened on the 27th inst. by the Prince and Princess of Wales, who are on that date visiting the Cardiff Fine Art, Industrial, and Maritime Exhibition buildings recently laid out from Mr. Seward's designs.

ALTAR, PARISH CHURCH, MEAVY, DEVONSHIRE.—The Parish Church of St. Peter at Meavy has received an addition in the form of a sculptured altar, the framework of which is of English oak and the slab of alabaster. The central panel beneath has a representation carved in high relief of the Man of Sorrows stooping under the burden of the cross. In the panels on either side are adoring angels. This offering to the church is the handiwork of Messrs. Harry Hems & Sons, of Exeter.

THE ARCHITECTURAL ASSOCIATION SUMMER VISITS:

I.—IPSWICH.

A SMALL party of members of the Architectural Association, under the leadership of Mr. F. R. Farrow, left Liverpool-street by the 10.0 a.m. train a few days since to spend a day at Ipswich. On arriving at that town the party proceeded by way of Prince's-street to Friar-street, where the first halt was made at the Unitarian Chapel. This was the first Dissenting place of worship erected in Ipswich, having been built in 1700 by a body of Presbyterians, whose pastor was one of the celebrated "two thousand" ministers who were ejected from their livings for nonconformity in 1662. The building possesses some good Renaissance detail, especially in carving, which is thoroughly English in feeling. It is worth noting that the woodwork and carving are all executed in deal. Proceeding by way of Falcon-street and Silent-street, the next halt was made at St. Peter's Church, with a fine tower, restored in 1882 under Sir Gilbert Scott. There is an interesting example of carved barge-boards on a house opposite the church, and next door is the well-known old gateway of the celebrated college built by Cardinal Wolsey in 1528 on the site of the Priory of St. Peter and St. Paul. The next visit was to the Key Church, or more properly, the Church of St. Mary at the Quay, a very interesting church, with good tower, and some brasses, of which that of Thomas Pownd, 1525, is a remarkably fine example. Another worthy of notice is that to Henry Toolye, 1551, with an altar tomb. The pulpit of seventeenth century date is very good, and the font of a not uncommon type in East Anglia, octagonal in form, with the carved emblems of the four Evangelists and angels, and four carved leopards on the base.

The party went then to the old "White Horse Tavern," of "Pickwick" fame, for lunch, after which the old mansion-house of Christ Church was visited, and thoroughly inspected under the guidance of Mr. Frank Woolnough, the curator and secretary. Then the visitors went on to the Butter Market, and saw the well-known Ancient House, with its famous plaster work, its curious recently-discovered private chapel, and the charming internal courtyard. The churches of St. Mary Tower, St. Lawrence, St. Stephen, and numerous old houses with the many carved corner-posts and barge-boards still remaining in the part of Ipswich near the river, the Fore Hamlet and district, were visited. Time did not permit of a visit to the Museum, which contains many examples of old woodwork and other local archæological and antiquarian relics.

THE MUNICIPAL ELECTRICAL ASSOCIATION.

THE first annual meetings of this Association were held in the United Service Institution on Wednesday, Thursday, and Friday, the 10th, 11th, and 12th of this month.* In addition to many municipal electrical engineers, a few officials of the Board of Trade and many consulting engineers and manufacturers attended and took part in the debates. Many papers, dealing on topics of more than technical interest, were down for reading and discussion, and the programme was got through successfully, although one wished that the abstracts of some of the papers had not been so painfully brief, and that the discussions had not been characterised by such feverish haste. In fact, as many practical topics were discussed in two days as the Institution of Electrical Engineers has discussed this year.

On the 10th Mr. Barnard, Borough Electrical Engineer of Hull, read an abstract of his paper on "Electricity Supply at 220 volts." He showed the advantages of this system of supply from the central station point of view, and considered how the change to a higher pressure affects the wiring and fittings of consumers. He said there was very little increased danger, and that 220-volt lamps could be had whose efficiency was practically the same as that of the ordinary 100-volt lamp. Mr. Jackson, of Newcastle, thought that too much attention was given to effecting economy in the copper used in the mains. A far more important consideration was the efficiency of the lamps used. In his opinion low-voltage lamps were far more efficient than high-voltage ones. The time was coming, he said, when the fight between gas and electric lighting interests would be far keener than it was at present, and the use of efficient small candle-power lamps would be of the greatest advantage in the struggle. Lamps of four or five candle-power could not be efficient at 200 volts. Mr. Wordingham, of Manchester, stated that he had experimented with ordinary fuse blocks on a 200-volt circuit, and had found that they sometimes failed to break the circuit, the terminals arcing across. He therefore warned people not to accept the statement that ordinary fittings could be used on a 200-volt circuit. Many others also joined in the discussion, and it was interesting to note that while those engineers who had adopted a 200-volt system of supply spoke favourably of it, everybody else showed a disposition to discount their statements, and regarded it with suspicion.

A paper by Mr. Couzens, of Taunton, was on alternating current stations and high-voltage lamps. He considered that if alternating engineers would adopt a 200-volt system of supply from transformer sub-stations, it would in many cases lead to great economies. As the change over could be easily made in most cases, the question resolved itself merely into one of the efficiency and the reliability of high voltage-lamps. We think, however, that Mr. Couzens has left out of account that a 200-volt alternating current supply would have little attraction for the ordinary consumer. We doubt whether consumers would care to accept it at this pressure; we certainly would not ourselves.

The next paper was perhaps the most important one read at this meeting. It was by Mr. Wordingham, and was on "The Control by Municipal Authorities of Consuming Devices and the Wiring connecting them to the Mains." He advocated the appointment of the Municipal Electrical Engineer as a compulsory consulting engineer to consumers, a small fee, depending on the size of the installation, being charged. The consumers would thus be able to get good and impartial advice, and would not be left helpless in the hands of contractors. The work put in would also be properly supervised. He thought that this would be far preferable to the alternative plan of the Corporation doing the wiring themselves—a course which invariably led to much friction.

Mr. Hammond, a consulting engineer, approved of this suggestion. He had had experience of incapable contractors and had refused to pass several installations in various towns. Mr. Wordingham's proposal, in his opinion, would not injure the consulting engineer, as anything tending to raise the standard of work would be, in the long run, for the benefit of the expert. Mr. Raworth thought that there was a tendency to err on the side of over-carefulness. He considered that the worst electrical light installation was far and away safer than the best gas installation. Instead of enforcing rules on the consumer, why not tell him to bind the contractor to act up to the Corporation rules? Needless irritation would thus be avoided and jerry-wiring safe-guarded against.

Another paper of great interest at the present time was by Mr. Hesketh, Electrical Engineer to the Queensland Government, and Mr. Rider, of Plymouth, on "Combined Electric Lighting and Traction Plant." The aim of the authors was to consider whether the day load of an electric lighting station could be increased by supplying electric tramways with the necessary current, or whether it would be necessary to have two distinct sets of machinery in one station. Continental practice was referred to and the relative merits of both systems were considered. In the first system, that namely in which the electric lighting machinery was used, it would be necessary to employ accumulators to provide for the overlapping of the two loads. In the other great economies in coal and in the size of the staff required could be made.

Mr. Gay (Islington) did not think either plan feasible in London, as the Board of Trade would not allow a Vestry to supply outside its own area, and so many interests being concerned would prejudice the smooth working. He thought that motor transformers with heavy fly-wheels would enable the lighting plant to be used. Storage batteries would be no great help, as they would rapidly deteriorate owing to the sudden and heavy fluctuations of the current.

Mr. Ferranti agreed that the difficulties in the way of combined working in London would be great, but thought that there would be no difficulty in provincial towns. If the original supply was an alternating current one, then non-synchronous motors could be used, and practically a fourteen hours' heavy load assured.

* This report was deferred from last week for want of space.

Mr. Manville stated that he was connected with two undertakings where they had heavy day loads assured before the stations were opened. At Shoreditch the Vestry had agreed to supply annually a day load of half a million units to an underground railway company at 1½d. per unit, and at Swansea the Corporation had agreed to supply the local tramway company on a sliding scale, ranging from 2d. to 1½d. He referred also to Hamburg, where the lighting stations supply the tramway companies with 6,000,000 units annually at a cost of 1d. per unit. The cost of generation was 0·710d. per unit, and the remaining fraction covered interest and depreciation.

Alderman Ellis said that at Portsmouth they had a combined system of supply under consideration, and were proposing to charge 1½d. per unit for traction purposes.

Many other papers dealing with subjects of primary importance to municipal electrical engineers were read.

Visits were also made to various public supply stations in London, and on Friday a visit was made to Brighton. Altogether this meeting augurs very favourably for the Association, which seems likely in the future to occupy an important position in the electrical world.

ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The annual excursion of the Edinburgh Architectural Association took place on Saturday last, when the members and friends, to the number of over thirty, visited St. Andrews. Leaving the Waverley Station at 9.35, they reached the old ecclesiastical capital of Scotland about half past eleven o'clock, and proceeded to the Alexandra Hotel, where lunch was served. Afterwards, under the leadership of Mr. Hay Fleming, St. Andrews, they inspected the West Port, reputed as a good specimen of an old Scottish gateway, the fragment of the Blackfriars Monastery, and, by permission of the Provost and Magistrates, the burghal relics in the Council Chamber. Next they were shown by the Rev. Dr. A. K. H. Boyd the parish church, with its monument to Archbishop Sharp, and other interesting features. The visitors, guided by Mr. Anderson, librarian, also viewed St. Mary's College and the University library. Mr. Hay Fleming having again taken up the leadership, the party examined St. Leonard's Chapel, the principal entrance to the Priory, and the gateway of Novum Hospitium, the last-mentioned said to date from the first half of the sixteenth century, and to have been twice rebuilt. At the Priory, the next object of interest, which was visited by leave of the Marquis of Bute and Mr. W. Logan, Mr. John Kinross, A.R.S.A., pointed out the result of the excavations and restoration, so far as they have gone. It was described as founded about 1144 for Augustinian canons. With the object of still further combining business with pleasure, the excursionists wended their way to several other places of architectural and historical interest, Mr. Hay Fleming acting as leader. Among these were the Cathedral (by permission of her Majesty's Board of Works), stated to have been consecrated in presence of Robert the Bruce; the Abbey Wall, with its towers and canopied niches; the Kirk Hill, with the foundations of St. Mary's Church; the Castle, or Episcopal Palace, dating originally from the thirteenth century; the Museum; and, by permission of Principal Donaldson, St. Salvator's Chapel and Tower. The party arrived in Edinburgh shortly after nine o'clock at night.

Correspondence.

To the Editor of THE BUILDER.

ON THE PLAN OF CONSTRUCTION OF HOSPITALS AND INFIRMARIES.

SIR,—The almost continuous erection of hospitals or infirmaries in some part or other of the country, and the almost uniform adoption of the "pavilion" plan, which was formulated between thirty and forty years ago, in response to the demands of medical science, seem to call for discussion by your readers, seeing that during that period medical science, like other sciences, has not been standing still, but has, indeed, undergone a remarkable evolution.

The pavilion system, as is pretty well known, was the outcome of the terrible mortality in the crowded huts on the Crimean battlefields, and the publication by the late Sir J. Simpson of his work on "Hospitalism." He had observed how vastly superior were the results of surgical operations and of childbirth in country cottages to those obtainable in palatial infirmaries, and he propounded the doctrine that the walls and fittings of infirmaries became infected with poisonous material from successive patients, by which newcomers were infected, and their doom sealed. This seemed to accord with the terrible experiences of the Crimean campaign; and a French architect introduced the now familiar "pavilion" ward, the basis of the principle of which was to admit abundance of light and air, so that the patient might live in an atmosphere approaching, as nearly as possible, that of a detached building.

Since that time two innovations have taken place, which, it appears to me, ought to have a material influence on the plan of construction of infirmaries. The first of these is the introduction of the antiseptic treatment of surgical patients. By means of this, the greatest advance which has ever been made in the whole history of surgery, the germs of disease are prevented from forming, and consequently much of the principle of segregation and of the pavilion system has lost its importance.

The second innovation is that of improvements in the manner of warming and ventilating. Instead of the open fire-place, with its many virtues, dear to the heart of the Englishman, and its many faults, causing the Englishman to use bad language, a uniform temperature is distributed throughout the ward by means of warmed air or hot-water pipes. And, instead of the open sash window, with its icy blast over the head of the patient in the depth of winter, various methods have been devised by which a continuous supply of fresh air is brought almost to the very nose of every patient as he lies in bed. It is no part of my purpose to compare the relative merits of the various systems of mechanical ventilation, but to speak of one only, of which I have seen several examples, and of which Lord Kelvin says, "it approaches as near perfection as human ingenuity can make it"—the *plenum* system. My experience of it leads me to believe that, by means of mechanical ventilation, a hospital ward may be constructed of any width or shape, provided always that there be sufficient light. The last-named point certainly must limit wards to a certain width, but there is no longer the necessity for the long pavilion, with its two outer walls, and the beds arranged between the windows. It seems certainly quite feasible that we should return to the old "block" plan, with a low wall, say the height of the dado, running down the middle of the ward, and beds arranged against it, opposite those against the outer walls. This would be an immense improvement over the long, narrow pavilion ward. We should, once more, be able to have some suitable proportion between length, width, and height, and within two outer walls, with the mid-feather, arrange four rows of beds of, say, six in each, instead of being forced to construct a long and comparatively narrow ward, with twelve beds against each outer wall. The mid-feather would, of course, be used for ventilation purposes.

The advantages of such a plan to the architect are manifest. In the case of a large hospital, as St. Thomas's, London, he has simply to multiply one scheme of ward as often as may be necessary to accommodate the requisite number of beds, and there is no possibility of securing a fine elevation. By the plan proposed, the number of detached buildings is at once reduced by half, and seeing that the bugbear of segregation may be dismissed, he may carry his building to such a height as the proportions of his plan may require.

Again, the difference in comparative cost of two such buildings, the pavilion and the block—or, as I may term them, the single and double pavilion—must be very considerable, so that, in the case of large towns especially, where land is land, and means money, this is a point of the utmost importance.

I trust, sir, that the considerations I have advanced in favour of the block system will induce some of your readers to express their views on the subjects.

Architects, of course, must comply with the demands of medical science; but infirmary committees are often too prone to follow blindly the fashion of the day, and it is this which now demands reconsideration. F.R.C.S.

KING'S NORTON CEMETERY COMPETITION.

SIR,—Referring to a letter which appeared in your issue of the 20th inst., like your correspondent I submitted plans in the competition for the cemetery buildings at Brandwood End for the King's Norton District Council. When the plans had been returned I wrote asking for further particulars of the result of the competition, and received the enclosed reply, which gives the desired information.

GORDON P. G. HILLS.

*** The official reply states that the first competitor in the award was Mr. J. B. Holmes, of Birmingham; and the second Mr. C. H. Edwards, of Bristol.

The Student's Column.

CARPENTRY AND JOINERY.—XXV. AND XXVI.

RODS.

BEFORE any work of importance can be carried out it is necessary that at least some part of it should be drawn out full size so that it can be referred to at any moment. This is done on a board which is called a *rod*. The old method of setting out rods was to chalk an ordinary deal board and to mark thereon with pencil lines, but this is found not to be a good method, owing to the chalk wearing off so easily and thus obliterating these lines.

The method now usually pursued in good workshops is to mix up a bucketful of whitening to a consistency of cream and to add a cupful of glue. The pail is then placed on the stove when the whole is well stirred and mixed together. There should be just sufficient glue to "fix" the whitening, in order to prevent it rubbing off too easily, but there should not be sufficient to make it string, as it then is difficult to draw upon. A pine board, 11 in. wide by ⅜ in. or ½ in. thick, is generally employed, and after it has had a good coat of the whitening, made as described, it is left three or four hours to dry, and is then papered down with glass paper when it is ready for setting out.

It is well to remember that in setting out rods, excepting only in the cases of very intricate or circular work, sections (either vertical or horizontal) are only employed.

In the cases of setting out rods for windows and doors, it is most important to work from the *brick opening*, as very few bricklayers are always particular to follow out the architect's drawings very exactly, and, in fact, it is not always possible to do so, as the bricklayer is limited to the size of his bricks and the courses of the brickwork, and also many bricks vary considerably in size.

First, therefore, obtain the size of the opening, the width of which in the case of a window is generally between the brick reveals, the pulley styles lining up from these. The height being from the stone sill to the underside of the gauged arch when the latter is horizontal; when it is segmental or circular, of course the height is taken to the springing, and the rise is then added. It is almost a universal practice to treat all openings as though square in the first instance, and then to cut a template in the case of any arch not either of the ordinary circular or segmental type. Perhaps the method of setting out rods will be best explained by taking a simple example. Figs. 421-423 represent the plan, section, and part elevation of a 2 in. framed partition which is purposely made of a heterogeneous design to illustrate better the method of setting out of fig. 424. Let C D E F represent the rod about to be set out, and from which the joiner will take his measurements.

Commence by drawing a floor line A B on the rod. In laying down the bottom rail on the rod, a little extra depth, shown by dotted lines (say an inch for soft woods and about half an inch for hard woods) is allowed for scribing to the floor in case of any irregularity or unevenness of the latter as laid. Mark off the total height of the partition, which in this case is regulated by the ceiling level, and again make an allowance for the purpose previously described for the bottom rail; next mark off the top edge of the middle rail, and set down therefrom the actual depth of the rail. It is usual to set off all the top edges of the rails from the floor line, and then to mark down therefrom their respective widths. Then mark off on the middle rail ½ in. within its lower edge for the panel groove (see fig. 422). Mark on the height of the frieze rail from the floor line, and set down therefrom the depth.

Next set down from the ceiling line the depth of the top rail. Now proceed to line in the panels, commencing from the bottom. The thickness of moulding to be used must be ascertained. In this case we have a ¾ in. moulding to deal with, so draw a vertical line ¾ in. from the *face* side (the *face* side of the work is the principal side, the other side being termed the inside), this will

leave in thickness a 1¼ in. bead flush panel. Draw the section of the beads at the top and bottom of the panels, and allow a ½ in. tongue at either extremity. The middle panel being glazed with ⅜ in. plate glass, draw two vertical lines ⅜ in. apart, equidistant from the centre of the thickness, and on either side draw the section of the moulding at the top and bottom. This moulding would be stuck on the framing on the face side, *i.e.*, worked in the solid; on the inside this moulding would be screwed on with cups and brass screws. The top panel is raised; this must be drawn to the section (fig. 422) showing a ½ in. flat surface of sufficient depth top and bottom to take the bolection-moulding which overlaps the framing ½ in. To fix this moulding the joiner would screw it from the inside of the panel; these screws in turn being covered by the inside moulding which would be glued or dowelled according to the quality of the work. Draw the moulding of the panel and the *fielding*, *i.e.*, the flat surface or "field" of the panel, and then draw in the moulding on the inside.

Now draw in the skirting on the face and inside, making a sinking of ⅛ in. within the thickness of the lower rail so as to prevent the joint showing in case of shrinkage, and allow for scribing to floor; then draw on the cornice at the top on the face side, or allowing in the case of a thin one a similar sinking as before described for the skirting.

The rod is now complete as regards the vertical section which is called by the joiner the "height." The "width" or horizontal section is set out as follows:—In fig. 425 let G H I R represent the width rod, commence by drawing in the outside or "clear" width (in this case 3 ft.) allowing outside this ½ in. extra width for scribing (see dotted lines), mark on this the width of the style on either side. Draw two lines 2 in. apart to represent the thickness of the framing and also two lines 1½ in. outside these to indicate the thickness of the skirting, and outside this the line representing the greatest projection of the cornice.

Now draw in the panel which can be gathered from the "height" rod, showing here the section of the ⅜ in. bead as this is "bead and flush."

The "height" and "width" rods are now complete for this simple piece of panelling.

In more elaborate works such as a bank screen with mouldings, breaking round pilasters, all these breaks would have to be carefully drawn in for the purpose of obtaining mitres as the joiner measures these direct off the rod.

The methods above described are usual in the case of all joiners' work with the addition, in the case of shaped work, of a full size elevation which is made on a rod composed of boards, usually glued together and provided with ledges on the back to strengthen it.

WORKSHOP PRACTICE.

IT is proposed to treat briefly of the above subject under the following heads:—

1. FRAMING UP.
2. FASTENINGS.
3. THE USE AND SHARPENING OF TOOLS.
4. THE CARE OF TOOLS.

1. FRAMING UP.—Great care should be taken in framing up work, as the stability of framing depends so much on the close and proper fitting of the joints. The following is the method usually adopted in putting a door together. All the styles and rails, &c., should first be fitted, and every part marked with a distinguishing letter or figure, so that the proper position of each piece may be clear. Commence by putting the lower rail in the bench screw, and drive the munting into its mortise, next drive on the middle rail and put in the lower panels, then lower this part of the framing on to the floor and drive the top munting into its mortise. Next put in the top panels and drive on the top rail, then turn the framing on the ends of its tenons on one of its sides and drive on the style. Turn the door over and drive on the other style, by this means all the parts are put together without any bruising of the shoulders.

This having been accomplished, lay the door on the bench upon two pieces of stuff, say 3 in. by 3 in., "out of winding," as this ensures the door itself remaining true, and then "try up" with the cramps. Then knock to pieces, and well glue both mortise and tenons, quickly drive rails on the muntings, then place mortises of styles on ends of tenons of rails, gluing both sides of tenons and mortises, and drive home and well cramp up, using two cramps, one at each end of the door. Then dip the wedges in glue and drive them home; after which leave the door till the glue is thoroughly dry.

The craftsman should be careful in the selection of his glue; that of a pale shade is generally superior to the darker shades. It should be prepared by being broken up in small pieces, and left to soak in water that just covers for about twelve hours; it may then be put in the glue-pot and thinned by hot water as desired. Work to be glued should be thoroughly dry, and be made perfectly clean and smooth, and the glue be applied as hot as possible. Glued articles should not be exposed to a cold temperature till the glue is set, and this it will not do in a freezing atmosphere. When glued work has to be exposed to the influences of the weather, linseed-oil and white lead are sometimes mixed up with the glue.

2. FASTENINGS.—*Bolts* are generally used for the purpose of giving added security to joints, though they weaken the wood through which they pass by severing the fibres, and are liable to become loose through the shrinkage of the timber; but this is generally obviated by one end having a solid head and the other a screw, on which is a movable nut, which may be tightened up. The following proportions for nuts and bolts are generally used:—

> Diameter of head and nut, ⅞ of diameter of bolt.
> Thickness of head, ⅞ of diameter of bolt; depth of nut, the same as the diameter of the bolt.
> Washers should be about three times the diameter of the bolt and half the thickness of the head.

Drawboring consists of forcing the shoulder of a tenon close up to the mortise, and is accomplished by making the hole in the tenon nearer the shoulder, instead of exactly coinciding with the holes in the cheeks of the mortise. An iron pin is then forced through, the latter being afterwards withdrawn and an oak pin inserted.

Nails are generally used for securing boards to beams, and are much in request for temporary purposes and in inferior work. They are generally known by their weight per thousand and by their length in inches. Formerly they were known by their price per hundred, *e.g.*, "tenpenny" nails meant tenpence per hundred.

Pinning consists in driving an iron or hardwood pin through the different pieces of wood forming a joint to hold them together. Care should be taken that the pin be not placed too near the end of a tenon, or the latter may shear.

Shoes of iron are sometimes used to receive the ends of the principal rafters, in which case a tie-rod instead of a tie-beam is generally used.

Socket pieces are occasionally used to receive the upper ends of the principal rafter, as shown at S in fig. 60.

Spikes are large wrought nails used for heavy work, as in bridges, and often in large temporary erections. The larger ones generally have square, flat heads.

Screws used by the carpenter and joiner are called *wood* screws, to distinguish them from screws used in metal work. The thickness of screws is identified by numbers from 00 to 40, the former being about $\frac{1}{3\frac{1}{2}}$ in. in diameter and the latter ⅝ in. Thus each number varies about $\frac{1}{64}$ in. from that number immediately above or below it. They are generally classed according to the shape of their heads, and are sold by the dozen or gross. There are many special forms of screws, such as handrail screws, dowel screws, coach screws, &c., which space prevents describing.

Straps are sometimes used instead of bolts to strengthen joints, and they have the advantage of not weakening the fibres.

It is desirable that they should be fixed as much as possible so that the strain should be in the direction of their length.

Stirrups are straps that support timbers, as shown at B in fig. 145, and the *gib* and *cottar* shown in fig. 61 is a form of strap supporting the tie-beam.

Trenails are pieces of hard wood used instead of iron nails for forming strong joints, and are useful when the work has to be exposed to the weather, as oxidisation is thus prevented. They should be split from the log so that the fibres are not injured.

3. THE USE AND SHARPENING OF TOOLS.—*Saws* are generally the first instruments used by the craftsman, so that it will probably be well to treat of these tools first. In using the ripping saw, the board or plank to be cut up should be laid between two sawing-stools, and the right knee should be firmly placed upon the "stuff" so as to keep it steady. The saw should be grasped by the right hand, with the index finger extended against the right side of the handle. The saw should be worked up and down in the same plane through the pencil line which has previously been marked on the stuff. It is well to constantly observe both sides of the saw to see that no divergence is taking place. As the work proceeds it is well to drive a wedge into the slit made, as this keeps apart the two pieces to be severed, and allows a freer passage for the saw.

After the sawing has been commenced by a few short and gentle strokes, the length and strength of which should be gradually increased, the whole length of the saw should be called into use, care being taken not to draw it out of the cut, as it is likely to be injured by striking against the wood in the return thrust. Great care should be taken, especially when using both hands, not to jamb the teeth into the wood, but to work the saw evenly and smoothly, as otherwise the saw may be rendered useless by being "crippled."

A slight deviation from the straight line may be rectified by twisting the blade, but this renders the saw liable to bind in the stuff.

When cutting through wood more than about 1½ in. thick it is usual to lubricate the saw with oil. If the stuff is more than 2 in. thick it is a good plan to mark on both sides the desired position of the cut, and to occasionally turn it over so as to cut from the opposite face, as this conduces to straighter and more regular sawing. When using a saw, care must be taken to cut just a little thicker than the actual width required, owing to the thickness removed by the "set" of the saw. This especially applies to back saws when cutting tenons, &c., and also where wood is not going to be planed up afterwards.

A saw is sharpened by three different operations, which are performed in the following order:—viz., *filing*, *setting*, and *gumming*. After the saw has been secured in a clamp, teeth uppermost, the teeth are dressed with the file at the desired angle. The saw is then secured in a horizontal vice, and the alternate teeth are *set*, *i.e.*, struck in a uniform manner with a hammer designed for the purpose, so as to bend every tooth at the same angle from the true horizontal. The saw is then reversed and the same operation is performed on the alternate teeth on the opposite side and in an opposite direction. *Gumming* is the process by which the throat of the teeth is deepened, and this is effected by means of punches. The three operations described are, at the present day, usually performed by machinery where possible, owing to the saving of labour and to the greater exactness obtainable by this means.

Planes.—The first thing is to adjust the irons. These should be taken out of the plane by grasping below the fork of the wedge with the left thumb and placing the fingers of the left hand round the plane and planting the back on the bench; a few smart taps on the nose of plane will loosen the wedge, and the irons may be taken out.

The screw connecting the cutting and back irons may now be loosened, and the former, if necessary, sharpened.

When this is accomplished, as described later on, screw up the irons tightly together, the cutting-iron being about $\frac{1}{32}$ of an inch in advance of the back-iron. The irons are then placed in the plane, which is held at an angle towards the craftsman with its back end on the bench, so that he may look along the sole of the plane.

When the edge of the iron projects the required distance beyond the sole of the plane, the iron itself is kept in position by the left thumb, and the wedge is pushed into its place by the right hand, and is gently tapped "home."

The set of the plane may be adjusted during use by tapping the iron or the nose as occasion may require, and when the iron is not set squarely with the sole a side tap is generally sufficient to correct it. The wood to be planed should be laid quite flat upon the bench, and pressed against the bench stop to prevent it from shifting. The plane must always be used in the direction of the grain, and if the latter runs in different directions, it must be turned about accordingly. When in use, the handle of the *jack plane* should be grasped by the right hand with the forefinger extended against the wedge. The left hand should hold the fore part of the plane, with the thumb down the edge nearest the operator.

The *trying-plane* should be held in a similar manner, but the exertion to use it differs in this respect that whereas the pressure of both arms such be uniform throughout in the case of the jack-plane, in the case of the trying-plane for the first half of the stroke the left arm exerts the most pressure, but for the latter half the right arm does most of the work. For "shooting" work the trying-plane is held with the fingers under

the sole, which thus act as a kind of gauge for keeping the plane on the edge of the stuff.

The *smoothing* plane is held by grasping it behind the cutting iron, the fingers and thumb of the left hand being in front and pressing it down on the wood. The sole of all wood planes is, of course, liable to wear away, and must occasionally be planed up true. The liability to wear away is reduced by occasionally well rubbing the sole with oil. When a plane iron is required to be sharpened it must be examined, and if the edge is found to be only "dull" it can be sharpened on an oil-stone in the following manner. Hold the iron with the right hand towards the top with the fingers on the underside, and place the fingers of the left hand together and across the upper surface of the iron. The iron is then held at an angle of about 40 deg. and rubbed carefully on the oiled stone for its whole length, as it is most desirable to wear away the stone as little and as truly as possible. It is also important that the same angle should be observed throughout the stroke, or the cutting edge will be convex instead of quite flat.

A blunt iron can generally be detected by a whitish, worn appearance, whereas a keen edge is invisible. The "wire" edge on the back of the iron should be removed by placing the back quite flat on the stone, and gently rubbing backwards and forwards for a few strokes. When the original bevelled edge made by the grindstone, which is generally at an angle of about 25 deg., has been much encroached upon by frequent sharpening on the oilstone, the grindstone must be again requisitioned, and a similar bevel to the original one must be ground on the iron. The latter is generally placed in a "support," which keeps it at the same angle, and thus a true bevel is obtained. The grindstone should be turned towards the operator, and should always have a trough underneath, so that when revolving it may be kept wet.

Chisels receive guidance only from the hands of the operator, and so require especial care and skill in using. *Paring* chisels are used without the aid of a mallet, the left hand holding the wood, and being always kept behind the edge of the tool, so that it may not be injured in the event of the chisel slipping. In paring along the grain, the index finger should be extended along the tang of the tool, but when working against the grain the handle should be grasped by all the fingers.

The *Mortise Chisel* is used in the left hand, while the right manipulates the mallet. Great care must be taken to make the edges cut by the chisel perfectly square. It will be noticed that if the flat side of the chisel be held against the shoulder to be cut away, the chisel must draw in and cause the joint to be hollow, whereas if the bevel side be held against the shoulder, the contrary effect would be the result. Consequently, the latter method should be adopted, and the superfluous material can be carefully pared away at the finish with the flat side against the shoulder.

Always commence a mortise by cutting wedge-shaped chips from the centre, working alternately from each side.

The remarks made as to sharpening planes apply equally well to the sharpening of chisels.

The *Gouge* is used in the same way as the paring chisel, and does not require further description. *Scribing Gouges* and bent tools are sharpened by being rubbed with a small piece of oiled Turkey stone.

Gauges should be used in the left hand when adjusting and using, as this saves much time by obviating the necessity of the craftsman to alter his position at the bench.

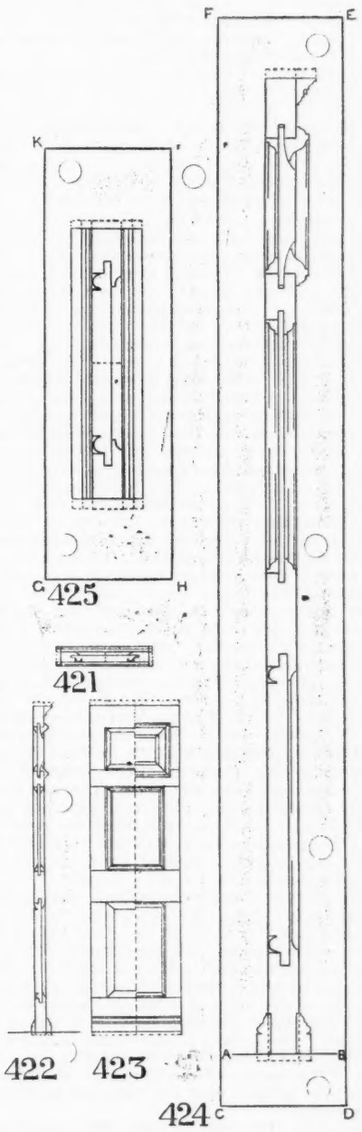
Grindstones consist of a wheel of sandstone mounted on axles revolved by means of a handle. They are too often neglected, because, as a rule, it is not the duty of any one in particular to look after them. They should not be exposed to the rays of the sun, as they become so hard as to be worthless, and the water in the trough should be drawn off after every operation, as if left to stand in water the grindstone becomes soft in that part.

Oil stones are of several kinds, the "Washita," perhaps, being the best value for the price. A case should always be made for them, and they should be wiped after use, with a handful of shavings. Salad oil only should be used, and cleansing with paraffin is not to be recommended, as it hardens the stone and thus reduces its cutting power.

4. THE CARE OF TOOLS.—The craftsman should always take a pride in having his tools well kept. The wooden parts of tools, such as the handles of chisels, and the stocks of planes are often soaked in linseed oil for a week when fresh from the makers, and then rubbed with a soft cloth for a short time every day for a fortnight. This treatment preserves the wood, and at the same time gives a good surface. All steel articles can be preserved from rust by placing a lump of freshly-burnt lime in the tool-chest. To prevent the lime from soiling the cabinet it should be placed in a muslin bag. To preserve a polished surface the metal may be covered with a mixture of one part of resin to six of lard, dissolved slowly together, and then thinned with a little kerosine. It should be very lightly rubbed on, and can be easily removed when required. Rust may be removed from metal by rubbing well with sweet oil, and then leaving it to soak for two days in the oil, after which it should be rubbed with finely-pulverised, unslaked lime. Another method is to immerse the article a short time in a solution of ½ oz. of potassium cyanide to 4 oz. of water; it should then be taken out and well brushed with a cream paste composed of Castile soap, whiting, potassium cyanide, and water.

Illustrations to Student's Column.

CHAPTERS XXV. AND XXVI.—RODS AND WORKSHOP PRACTICE.



421. Plan of panelled partition.
422. Section of panelled partition.
423. Half elevations of panelled partition.
424. Method ofsetting-out "height rod."
425. Method of setting-out "width rod."

OBITUARY.

THE LATE SIR JOSEPH PRESTWICH.—It is with great regret that we record the death of Sir Joseph Prestwich, F.R.S., late Professor of Geology in the University of Oxford; he died on Tuesday last, at his residence near Shoreham, at the advanced age of 84. Professor Prestwich was one of the foremost geologists of his day, and with him almost the last link which united the men who made geology an inductive science and the present generation of workers has been severed. He belonged to the school of Lyell, Murchison, and Sedgwick, though he was unable to accept all the doctrines they enunciated. To our readers he will be remembered as one of those very few geologists who take an interest in the economic aspects of the science. His masterly researches on the distribution of the sands, gravels, and clays overlying the chalk in the London basin, and more particularly the subdivisions of the lowest Eocene deposits, paved the way to a fuller appreciation of the possibilities of obtaining a water-supply for the Metropolis from "the ground beneath us." It was natural, therefore, that he should be chosen a member of the Royal Commission on Metropolitan Water-supply. He gave an improved water-supply to Oxford. Everything in connection with the supply of coal claimed his attention. His first important paper, published in 1835, was on the Coalbrookdale area; and as late as 1886 we find him rendering valuable services as a member of the Coal Commission. The Institution of Civil Engineers is indebted to him for his memoirs in reference to the geological structure of that part of the English Channel in the neighbourhood of which it was proposed to bore the Channel Tunnel. In the closing years of his life he gave us a splendid text-book of geology, the result of years of labour and of mature thought. Professor Prestwich was a great and good man, always full of encouragement for his students, and endeared to all who were so fortunate as to know him.

GENERAL BUILDING NEWS.

THE SHAKESPEARE THEATRE.—The commemoration stone of this theatre was laid on Wednesday by Mr. Forbes Robertson; the building, however, being already up to balcony level. The theatre is to provide for the neighbourhood of Clapham, Battersea, and Wandsworth, and is on a very good site near the municipal buildings at Lavender-hill. The main frontage of 60 ft. in Lavender-hill and return frontage will be of Classic character and executed in stone with a projecting portico and balcony. The theatre will be what is known as a two-tier house, viz., stalls and pit on the ground floor tier, dress circle and balcony on the first tier, gallery and amphitheatre on the second tier, and the usual private boxes. It is intended that it should be decorated, upholstered, and generally equipped in a manner to compare with any of the West End theatres. The theatre will be approached, for the stalls, dress circle, balcony, and private boxes from Lavender-hill, into a richly-decorated vestibule and crush room, and from here by short and easy stairs and slopes direct to each separate part of the house. The pit and gallery entrance will be from "Theatre Road," the new road which has been formed at one side of the site in order to comply with the requirements of the London County Council. Abundant emergency exits are provided from every part; whilst the fact that the theatre will be constructed entirely of concrete and steel will more than satisfy any doubts as to fire dangers. There will be no columns to impede sight, and the easy arrangement of the seating and general comforts of the audience have received most careful attention from the architect. The decorations of the auditorium, vestibule, crush-room, and lounges will be Renaissance, with the draperies and upholstery in silk, velvet, and plush, and the electric light, supplied from the proprietors' own plant, will be made a special feature in the decoration of the house. The stage will have a clear width of 70 ft. and a depth of 50 ft., and a height of 55 ft. to the grid. The dressing-rooms are to be models as regards ventilation and sanitation, and will be provided with hot and cold water supplies, and be heated, and will stand as a separate block cut off by brick walls and iron doors from the stage. Retiring-rooms and saloons are to be provided to all parts; a system of low-pressure hot-water pipes and radiators will be provided throughout the building, and the stage and auditorium will be separated by a fire-proof curtain and dominated with a complete system of hydrants. The theatre will be one of the largest in London, covering a superficial area of 14,000 square ft. The architect is Mr. W. G. R. Sprague; the contractor, Mr. Charles Gray Hill; and the clerk of works, Mr. Brough. The building will involve an expenditure of 25,000*l.* in land and building, part of which has been incurred in the purchase of extra land to form the new road, "Theatre Road," above referred to, in accordance with the requirements of the County Council.

RECTORY, LITTLE BERKHAMSTEAD, HERTS.—The new rectory has been built for this parish from designs and plans approved by the Marquis of Salisbury, K.G., as patron, and the Bishop of St. Albans as diocesan, and stabling is about to be built from similarly approved plans, all of which have been passed by Queen Anne's Bounty. The walling is of local red brick, and the roof of brown-red Broseley tiles, laid on felting and boarding. A circular tourelle contains the principal stair, arranged without windows. This is covered with grey Tilberthwaite slates. The stonework of dressings is selected Weldon stone. The works have been done by Mr. Wilford, builder, of Newport Pagnell, and the architect is Mr. E. Swinfen Harris, of London and Stony Stratford.

RIVERSIDE RESIDENCE, MAIDENHEAD.—A new riverside residence is being built for Mr. J. W. Benson, between the Gas Works and Taplow Mills. The house is being erected from designs by Messrs. Davy and Salter, of Maidenhead, Messrs. J. K. Cooper & Sons being the builders.

CHURCH, ASPULL, LANCASHIRE.—On the 16th inst. the Countess of Crawford laid the foundation-stone of the Church of St. John the Baptist, at New Springs, Aspull, near Wigan. The church is cruciform, and consists of a nave, chancel, and north and south transepts, and will provide accommodation for about 500. The nave, being wider than the chancel, is terminated at its eastern end by a sort of apse with arches tapering inwards to the narrower width of the chancel. These arches form also the entrance to the transepts. Arcades filled in with openwork screens separate the chancel on the north and south from the transepts, while between the chancel and the nave, under the chancel arch, is a low screen wall surmounted with iron work. The pulpit is projected west from this wall, and kept low and open so that it may not obstruct the view. At the west end of the nave is the baptistry, the walls of which are carried up to form a small tower. The church is built mainly of local bricks, with sills and dressings of terra-cotta and stone. Inside, above a red brick dado, the walls are faced with buff bricks, with cornices and quoins of red brick. The outer doors are of oak, the choir stalls and screens and nave seating are of pitch pine. The total cost of the church and boundary walls will be about 5,200*l*. Mr. C. B. Holmes is carrying out the work, under the superintendence of Mr. Medland Taylor, the architect.

BOARD SCHOOLS, TINSLEY, SHEFFIELD.—The new schools which have been erected by the Sheffield School Board, at the corner of Tinsley Park-road and Coleridge-road, were opened by Ald. Batty Langley, M.P., on the 15th inst. The building is in the English Renaissance style. The plan is arranged to provide accommodation for 764 children. The ground floor contains a schoolroom 60 ft. long by 24 ft. wide, and three class-rooms, and has seating accommodation for 404 infants. The first floor contains a similar schoolroom and four class-rooms, and has accommodation for 360 boys and girls mixed. Each department has the usual cloak-rooms, lavatories, corridors, entrances, &c., and in connection with the girls' school is a scullery, for the purpose of the girls' cooking class. On the ground floor space has been found to provide a covered play-ground for the infants, which can be got at from the school without going into the open. Covered playgrounds for the boys and girls are also provided in connection with the respective departments. The whole of the schoolrooms and class-rooms are divided by glazed screens, some of which are movable so that the rooms can be made into a large hall if necessary. The entrances are so placed that each class-room can be emptied without disturbing the scholars in any of the other rooms. There are two entrances to each department, with hat and cloak-rooms in connexion therewith, also a teachers' room in close proximity. The floors on the ground floor are of wood blocks, laid solid in Stockholm tar and concrete, and the floors on the upper story are formed of two rows of wood boards, with a layer of felt in between them. The method of heating and ventilating the schools is by low-pressure hot-water pipes, a steam coil being carried to the main extraction ventilator to assist the shaft to carry off the vitiated atmosphere. Fresh-air inlets are provided under the window-sills, and at the back of the heating radiators, and by Mellowes' patent ventilators in the windows. The contract for the whole of the work was let to Messrs. G. Longden & Son, of Neepsend, Sheffield; Messrs. Longden & Co., of Phœnix Foundry, Sheffield, were the contractors for the heating and ventilating scheme; Mr. J. Scrimshaw asphalted the play-grounds; and Mr. J. Laidler acted as clerk of the works. The buildings have been designed by Messrs. Holmes & Watson, architects, Sheffield.

CONSERVATIVE CLUB, WHITWORTH, LANCASHIRE.—The corner stones of a new Conservative Club at Whitworth were laid recently. The building, which will be of stone, is to be two stories high. On the ground floor there are to be a billiard-room, reading and conversation rooms, a bar, hall, and vestibule. Upstairs there will be a large room, which will be used for public meetings. Mr. Joseph Law, of Whitworth, is the builder of the new club; the architect is Mr. Norcliffe Mills, of Rochdale.

CHAPEL, ROCKWELL COLLEGE, IRELAND.—The Rev. Dr. Croke, Archbishop of Cashel and Emly, laid the foundation stone recently of the new church in connexion with Rockwell College, Cashel. The new church is designed for 300. It has been planned by Mr. G. C. Ashlin, C.E., Dublin, and is estimated to cost 3,000*l*. It will be cruciform in shape, with a total length of 110 ft., a clear breadth of 32 ft., and rising to a height of 50 ft. It will be flanked by an ornamental tower of 120 ft. high. It is intended to connect the chapel with a new wing, which it is proposed to add to the college.

ST. MARGARET'S MEMORIAL CHURCH, DUNFERMLINE.—The finished portion of St. Margaret's Memorial Church, Dunfermline, consisting of the nave and aisles, was opened for public worship on the 17th inst. It is the purpose of the Catholics of Scotland to erect a large church as a memorial of St. Margaret, and plans were prepared by Dr. Rowand Anderson, Edinburgh, for a building estimated to cost 30,000*l*. Only part of the design has, however, been in the meantime carried out. The cost of the nave and aisles was estimated at 6,415*l*.

ALTERATION OF LIVERPOOL PUBLIC BUILDINGS.—The Liverpool City Council having applied to the Local Government Board for sanction to borrow 17,500*l*. for alterations and additions to the Town-hall, St. George's-hall, and the Municipal offices, Mr. Rienzi Walton, M.Inst.C.E., inquired into the matter on the 19th inst., in the Council-chamber at the Town-hall. The application also included a request for approval of the sale of the Corporation reversionary interest in certain premises in Pembroke-place to the trustees of the Royal Infirmary. Mr. Pickmere, Deputy Town-Clerk, explained that the public buildings were erected out of the capital personal estate of the Corporation. It was now proposed to spend 4,750*l*. on structural alterations at the Town-hall, and 800*l*. on new furniture for the Council-chamber, consequent on the enlargement of the number of the Council arising from the extension of the city. On the St. George's-hall it was proposed to spend 1,300*l*. for increased accommodation for witnesses at the assizes, and 5,113*l*. 14*s*. for the decoration of the large hall, the concert-room, &c.; 1,100*l*. was required for modernising the organ, and for providing the three buildings with the electric light the estimated expenditure was 5,550*l*. Mr. Shelmerdine, the City Surveyor, gave evidence as to the alterations and additions necessary at each of the public buildings named, and the estimated cost. There was no opposition.

WELSH BAPTIST CHAPEL, CARDIFF.—The new Welsh Baptist Chapel at the junction of Walker-road and Adeline-street, East Moors, Cardiff, has been completed and opened. The building, which was built of local blue stone with Bath stone dressing, by Mr. C. Haywood, from designs prepared by Messrs. Habershon & Fawckner, will seat about 800 worshippers, and cost about 2,600*l*.

CHURCH, KEA, CORNWALL.—The new church at Kea, near Truro, built from designs by Mr. George H. Fellowes Prynne, was consecrated recently. The foundations of the old church, being on rock, were to a large extent made use of; but more ground was taken from the churchyard to the eastward for the sanctuary and chancel, and for a transept and south porch, which latter remains to be completed. The main dimensions are—length of nave 67 ft., width of nave 21 ft. 6 in.; total width of church, with north and south aisles, 40 ft.; chancel, 21 ft. 6 in. by 32 ft. The style is a free treatment of the Perpendicular. The principal material used for the walls is stone from local quarries, Calenick and Poltesco, and a stone of yellow tone from a newly-discovered quarry at Kerley. To these are added some courses of red Paignton stone. In the arches quoins of dark Polyphant stone alternate with the Bath stone, which has been used for the interior dressings throughout. Outside the dressings are granite. The nave arches, which are of wide span, are decorated with carved pateras. The roof is an open one with stained deal rafters, and the floor is laid in wood tiles. In the chancel steps are to be found some more of the granite from the church at Old Kea, whilst the altar steps consist of white marble. The floor of the sanctuary is laid in tiles. The altar is the gift of the vicar, and was made by Northcott, of Ashwater, Devon. It is made of oak; and on the front are five panels, with the Agnus Dei in the centre and adoring angels on either side, painted by Mr. E. A. Fellowes Prynne. The pulpit is also constructed of oak, mounted on a base of Bath and Polyphant stone. This was made by Mr. Jabez Parkyn, of Truro, who was also responsible for the choir stalls, which are made of oak. The church is seated with chairs provided by Messrs. Gill & Son, Truro, and fitted with a heating apparatus by Wood & Co, Bristol. It is on the low pressure system; the boiler is of a capacity to heat 800 ft. of pipe. The font, which is the old British or early Norman font, has stood both in the church which has recently been demolished, and in the still more ancient building at Old Kea. The same may be said of the old bell, which is the sole occupant of the belfry chamber, and which is one of the few pre-Reformation bells to be found in Cornwall. The exterior of the church is tiled with red tiles, and surmounting the tower is a copper spire. The builder of the church is Mr. Arthur Carkeek, of Redruth, and Mr. Jones has been clerk of the works.

VICARAGE, CATFORD, KENT.—The foundation stone has just been laid of the vicarage for the parish of St. Laurence, Catford. The building, the site of which adjoins the church, will have a frontage to the Bromley-road. It is being erected by Mr. G. Davenport, of Camberwell, from designs by Mr. R. Creed, of Finsbury-circus, and will be of stock bricks, with red brick quoins, and will contain sixteen rooms. The total cost is estimated at about 2,000*l*.

IMPROVEMENTS AT NEW BRIGHTON.—Messrs. Maxwell & Tuke, architects, of Manchester, have just commenced operations upon the Rock Point Estate, New Brighton, Cheshire, where it is contemplated erecting a tower and entertainment buildings. The estate consists of rather over 20 acres of wooded, undulating land, and it is proposed to erect a tower and buildings in about the centre of the site, and to devote the remainder of the land to recreation and pleasure grounds, amongst the principal of which will be a quarter-mile cycle track, with running track and full-size football ground; also accommodation for at least 30,000 spectators around the same. There will also be an aquarium in an old red sandstone quarry upon the estate, together with large bowling-greens, tennis-lawns, &c. Cafés and refreshment-rooms, &c., will be provided at various points upon the estate.

CHURCH, KING'S ISLAND, CLONOE, IRELAND.—The new church at King's Island, Clonoe, was recently dedicated by Cardinal Logue. The architect of the building was Mr. J. J. M'Donnell, Belfast, and the contractor Mr. Joseph Boyle, Cookstown.

SCHOOLS, HEREFORD.—The memorial stone has just been laid of the infant day school now in course of erection on land adjacent to St. James's Church, Hereford. The architect is Mr. G. H. Godsell, and Messrs. Beavan & Hodges are the builders.

FREE LIBRARY AND BATHS, DEWSBURY.—The Mayor of Dewsbury (Mr. G. A. Fox) recently opened the new premises which have been erected for the purposes of a Free Library and Public Baths. The new building, which has cost upwards of 20,000*l*., occupies the site of the old Wheelhouse Charity School. The Free Library is entered by a separate door and vestibule, and includes a large hall for use as a newsroom, a smaller room for the reference library, and separate reading-rooms for ladies and for boys. The principal place is occupied by the lending library, which contains some 10,000 volumes. These rooms are all on one floor, and are on the ground level of the street in front of the building. The road in the rear is, however, much lower, and the baths, which are constructed partly underneath the Free Library, have thus also an entrance on the ground floor. Two swimming baths, both 75 ft. in length, are provided for first and second-class bathers, and there is a series of private baths, and a Turkish bath with a cooling-room with fountain, massage-rooms, plunge bath, and three hot-rooms; the hottest being designed for the attainment of a temperature of 220 deg. Fahr. A laundry and the residential accommodation for the bath superintendent are also provided. The architect was Mr. G. E. T. Laurence, of London.

CATHOLIC CHURCH, FRASERBURGH, ABERDEEN.—The new Catholic Church at Fraserburgh was opened and dedicated recently by Bishop Macdonald, of the diocese of Aberdeen. The church is built on the site of an old curing yard in Commerce-street. It is early Gothic in style, and was built from the plans of Messrs. Ellis & Wilson, Aberdeen. It faces Commerce-street, while the side of the church runs along Lodge-walk. Adjoining the church is a presbytery for the priest. The church is seated for 350 in the area and fifty in the gallery, which occupies the back end of the church. The contracts for building amounted to 2,243*l*. The contractors for the new church were William Davidson, builder, New Pitsligo; Brebner & Jenkins, joiners, Fraserburgh; Thom & Strachan, plumbers, Aberdeen; James Stuart, painter, Fraserburgh; George Noble, plasterer, Fraserburgh; Robert Morrison, slater, Fraserburgh; R. Tindall, Aberdeen (heating).

ENLARGED FREE CHURCH HALL, TAIN, ROSS.—The enlarged hall of Tain Free Church has just been opened. The addition to the hall has been designed by Messrs. A. Maitland & Sons, architects. It is placed at right angles to the west end of the old hall, to which is added the site of the out-houses. The contractors were:—For mason work, Mr. Wm. Fraser; carpenter, Mr. Hugh Mackenzie; plumbers, Msssrs. W. Macrae & Sons; plasterer, Mr. John Munro; and painter, Mr. W. Urquhart.

WESLEYAN CHAPEL, REDGRAVE, SUFFOLK.—A new Wesleyan Chapel is being built at Redgrave by Mr. G. Adams, contractor, of Stanton, under the superintendence of Mr. R. Oxborrow. The building is of red brick, with white brick facings.

CAULDON-ROAD SCHOOL, HANLEY.—This school, which was opened on the 19th inst., has been built adjoining the one built in 1891, and is a mixed school planned on the central hall system with class-rooms grouped around it. The central hall is 68 ft. by 35 ft., and there are two class-rooms each for seventy children, and seven for sixty children each, thus giving a total accommodation, including a class of sixty in the central hall, of 620 children. There are spacious cloak-rooms and entrances, with large teachers' rooms and store-rooms over. The school has glazed tile dados and plastered walls above tinted in harmony with the dado, the woodwork being painted. All the class-rooms have open fireplaces which will be supplemented by a hot-water high-pressure apparatus, and the whole is well ventilated and lighted with Stott Thorpe gaslights. The architect is Mr. Edward E. Scrivener, the Architect to the Board; and the builder is Mr. G. Ellis, of Hanley, whose contract for the buildings, including boundary walling, ashing playgrounds, &c., was 3,680*l*., or 5*l*. 18*s*. 8½*d*. per head.

SANITARY AND ENGINEERING NEWS.

HOUSE DRAINAGE, CARDIFF.—A meeting of the Joint Public Works and Health Committees of the Cardiff Corporation was held recently to further consider and discuss the supplemental report of the

Borough Engineer (Mr. W. Harpur) with reference to the better inspection of house drainage in the borough. The proposed new by-laws, which were discussed at a previous meeting, were again read, and eventually confirmed and adopted. Regarding the inspection of drains, Mr. Harpur now recommended:—"That an additional inspector be forthwith appointed for the western district, and the district divided; that each inspector be supplied with a smoke-testing apparatus and suitable wheelbarrow for conveying same to and from drains where the test has to be applied; that a labourer from the Highways department be placed at the disposal of each inspector to convey the smoke-testing apparatus from place to place and assist in applying the test; that in order that the smoke test may be properly applied, the drainage of each premises be in every case possible completed and smoke-tested before any portion is covered up; that in no case shall the drainage of any house be allowed to be covered up in more than two sections, and that only where the sewer is unusually deep. In such cases where the point of connexion with the sewer is more than 10 ft. in depth the first section to be inspected from the point of junction with the sewer until the drain rises to within a depth of 7 ft. from the surface of the ground, the remainder of the drain to be completed before the same is further inspected, tested, and covered up. Where any drain has to pass under any house, there should be three visits by the inspector, viz.:—(1) to see that the concrete bed under the pipes is properly made; (2) to inspect the pipes before they are covered up by concrete, and (3) to see that the concrete covering is properly made and completed—the latter inspection to take place upon the final inspection and testing of the drains. If these recommendations are adopted it may become necessary to appoint further building inspectors, but this will be better ascertained after the system has been put into operation and given a trial. As to discoveries of defective drains by the inspectors in the Health Department, I recommend that all such cases be forthwith reported to me as was formerly the practice, and that the building inspectors act in conjunction with the sanitary inspectors in relation to such cases. If this practice is again reverted to the building inspectors would have an opportunity of seeing any alleged defects in work done under their supervision, and in conjunction with the sanitary inspectors see the defects ultimately made good, and in case of any proceedings in the courts with respect thereto their additional testimony would no doubt be valuable." These recommendations were considered seriatim. On the motion of Mr. Allen it was resolved: "That the Borough Engineer be directed to instruct each inspector to keep a record, in a book to be provided for that purpose, giving the result of each visit and of each inspection, in pursuance of recommendation No. 6," and "That the Borough Engineer be directed to instruct his inspectors to smoke-test every new drain before permitting the same to be covered up." After some discussion it was agreed that twenty-four hours' notice (instead of forty-eight) to inspect new drains be given by the builder to the Borough Engineer. Councillor Mildon protested against recommendation 5 as being utterly impracticable, and the builders never would comply with it. They could not keep a deep drain open three or four days under that rule. Eventually the recommendations as amended were adopted.

PROPOSED SEWERAGE WORKS AT ABRAM, LANCASHIRE.—Mr. G. W. Wilcocks, M.I.C.E., one of the inspectors of the Local Government Board, recently held an adjourned inquiry relating to the prodosal of the Abram District Council for borrowing powers for 20 000*l.* for works of sewerage and sewage disposal. Mr. Heaton, the engineer, described thr proposed works, which consist of outfall works. The scheme provides for the sewering of the whole of the township. The outfall works will consist of two precipitation tanks, each capable of holding one day's flow of sewage. The sewage will be pumped to a higher level into two other precipitation tanks, provided with revolving sludge cleaners and upcast delivery-pipe. It will then pass through six filter beds, after which it will be applied to the land for irrigation.

NEW DOCKS, PORTSMOUTH.—The construction of the new docks at Portsmouth—the largest in all of the Government yards—has progressed so rapidly that No. 14 is just completed and No. 15 will be finished some five or six months hence. Commencing in August, 1893, says the *Shipping Gazette*, the contractors—Messrs. Price, of Westminster—undertook to complete both docks in five years, but in one case they will anticipate their undertaking by over two years, and in the other by about twenty months. The foundation of the floor consists of 3 ft. of Portland cement, above which lies 7 ft. of brickwork, and above that again 4 ft. of granite, while the sides vary in thickness to suit the formation of the work, the concrete ranging from 4 ft. at the top to about 10 ft. at the springing of the sides, the inner lining of brick varying in less degree, and the granite facing still less. Altogether 15,000,000 bricks and 63 000 cubic ft. of granite, measuring 13 ft. to the ton, have been used in the construction of the docks. During the progress of the work the stones have been cut and dressed in the quarries at Penryn, Cornwall, being delivered ready to be placed *in situ*. The following are the principal dimensions:—Extreme length at coping, 563 ft. 6 in.; length on floors, 550 ft.; extreme width at copings, 120 ft.; width on floors, 75 ft.; depth, 43 ft. 6 in.; depth of water over sills, 33 ft. 10 in. The two docks differ only in width of entrance, No. 14, which retains the masonry that was built when the dock was designed in 1868, having an opening of 82 ft., while No. 15, which had the original entrance widened under the present contract, has an opening of 94 ft. Both docks can be lengthened 15 ft. by placing the caisson in the present stop instead of the one that has been newly cut, and will each be capable of holding more than 12,000,000 gallons of water. The most serious engineering difficulty occurred in widening the entrance to No. 15, the object of altering it from 82 ft. to 94 ft. being, not so much to provide for the possibility of a ship having such enormous beam, but in order that a battleship, damaged in action and lying low in the water, might pass into the dock safely, and the masonry at the base is square cut to provide for this contingency. As the docks, which are side by side, open into the repairing basin, the widening of the entrance necessitated the construction of a cofferdam 107 ft. wide, and as the piles were sunk it was found that some were driven upon boulders and others into the sand. There being a pressure of 3,000 tons of water on the dam it was not long before the water rushed through, carrying the sand with it. The dam had, therefore, to be so constructed as to resist the leak, and two rows of sheet piling, 5 ft. apart, were driven into the basin, but from time to time the obstruction had to be further strenghtened and the foundation protected by clay. But, as the sand and water contined to flow through, sacks were placed inside the clay, and as the water was thus filtered the sacks retained the sand; thus the leak was ultimately utilised to cure itself. When this difficulty had been overcome, the "dumpling" that had been allowed to remain between the dock entrance and the excavation was removed and the work proceeded steadily, being further facilitated by the absence of frost during the past winter. The protracted frost of the previous winter, however, gave rise to serious anxiety at No. 14, as it produced several landslips on the east side, within a few feet of the electric shop. The difficulty was increased by the severity of the weather, the loose character of the soil, and the steepness of the cutting, but when the frost ceased the difficulty vanished. Each dock contains a sump for the collection of leakages, which are drawn into the subways beneath the foundation, connecting the docks with the general pumping system of the yard, and the culverts through which water pours into the docks are of such a height that a man of ordinary stature can walk through them without stooping. The coping of No. 14 has been finished, and six 7-ton compressed-air capstans, which are now being placed in position round No. 14, will be supplied with motive power from the air compressors in the main pumping station, while the stanchions round the top and the blocks on the floor of the dock are in an advanced state. Each dock entrance is to be provided with a steel caisson with a greenheart keel bearing a granite face, in order to make a watertight door when the dock is empty. The works were designed by Major Pilkington, R.E., and were commenced under the direction of Major Rahan, R.E., who has since been transferred to the Admiralty as director of works, and his duties have devolved upon Major Exham, R.E., superintending engineer. Mr. C. H. Colson, is the Admiralty engineer in immediate charge of the works, and Mr. A. W. Manton, is the contractors' agent.

WATER SUPPLY, COWBRIDGE.—The Cowbridge (Glamorgan) Town Council, at their last meeting, decided to call in Mr. H. Bertram Nichols, C.E., of Birmingham, to prepare a scheme of water supply for the town.

FOREIGN.

FRANCE.—The State, up to the present time, has only bought paintings and sculpture from the Salons, but this year it has purchased some architectural works—the decorative painting for the Chapel of Viaulnay, by M. Guédy, and the mural painting in the Church of St. Sauveur at Caen, by M. Vasinier.——The work of extending the Rue Réaumur from the Rue de Cléry to the Place de la Bourse will shortly be commenced. This latter section will place the neighbourhood of the Place de l'Opéra in direct communication with the Rue du Temple, by the Rue du Quatre Septembre and the Rue Réaumur, thus materially relieving the traffic between the Place de l'Opéra and the Place de la République.—— It appears that the Mairie of the XIXth arrondissement is already beginning to require restoration. It was the work of M. Davioud, architect, and has only been built about sixteen years. It has been found necessary to strengthen the left wing at the angle of the Rue du Rhin and the Place Armand Carrel.——The exhibition of the pupils of the Villa Medicis will be held at the École des Beaux-Arts during next week.——A committee is shortly to be formed in Paris to erect a monument to the eminent caricaturist Gavarni.——The Chamber of Commerce in Paris has just opened an architectural competition for a commercial school in the Avenue de la République. The competition will close in October.——It is announced that the Baronne de Trétaigne has given a million francs for the restoration of the old church of Saint Pierre de Montmartre. This is one of the most curious churches in Paris, in which some of the marble columns belonging to the Temple of Mars are still visible.——The church of Notre Dame de Fourvières, at Lyons, was consecrated on the 16th inst.

GERMANY.—Among the competitions which have lately been held in Germany we notice that there are two for large casinos at fashionable summer resorts, one at Sylt on the north coast, and the other at Pyrmont. Competitions for town halls are also very common at present, and we would mention among them those for a Town Hall at Duisburg and at Linden. The great popularity of competitions at the present moment tends to make local practice in the provinces extremely difficult, as even small public buildings commencing with a value of 10,000*l.* are almost invariably being put up for general competition, and commissions to local men come but rarely.——Berlin is also having its "Olympia" Theatre, or kind of auditorium not unlike ours at Earl's Court and Addison-road. Its erection is due to an enterprise with which Bolossy Kiralfy is connected. Messrs. Enders & Hahn have been entrusted with the work in connection with Mr. Tietz.——A large number of lectures are being held in connection with the Berlin Industrial Exhibition at popular prices, and a spacious assembly-room has been placed at the disposal of the lecturers. A considerable number of subjects have been popularly treated, and amongst them architecture has not been forgotten. We may mention among others the lectures of Professor Raschdorff on the new cathedral at Berlin, and those of Dr. Lessing on sanitation in dwelling-houses, while Dr. C. Gurlitt is to read a paper on German Rococo, and Herr Bunte on gas as a luminant in private houses.——At Dresden the important work in connection with the rebuilding of the central railway station and relaying of the principal lines is costing some 35,000,000 marks or 1,750,000*l.* It is interesting to note from our contemporaries how systematically the work is being done under great difficulties, as the traffic must not be interfered with during the building operations.——The Saxon Society of Architects have been celebrating at Dresden the fiftieth anniversary of their formation. The number of members is now 550, which makes the Society one of the most important and influential in Germany.——After much discussion Munich is apparently to have some new public exhibition halls, at an outlay of about 45,000*l.* This expenditure will include an invaluable siding from the central station for goods coming by rail, and hence the cost of cartage will be much decreased.——Carlsruhe is having a large number of new public buildings, one of the most important of which is the electro-technical institution, which is being built at a cost of about 30,000*l.* Of engineering works in connection with this city one of the most important is the proposed Rhine Canal and Inland Harbour, which will require an expenditure of about three and a half million marks, or 175,000*l.*——In the present month Dusseldorf has opened a new river harbour which has cost nearly 500,000*l.*, and will no doubt add to the importance of this city, as it depends largely on its Rhine traffic for its commercial position.

CHICAGO.—The last brick in the new 7-foot tunnel of the Chicago, Ill., Water Works was laid on June 2. This extends under Lake Michigan from the Government pier to the 2-mile crib, and is 6,045 ft. long. A tunnel one mile long, built in 1890, connects the Government pier with the Chicago-avenue pumping station. Work on the new tunnel was begun by the contractors, Messrs. Ross, McRae, & Ross, October 25, 1895. The tunnel was worked from both ends. The section from the pier was 4,438 ft. long, and was constructed at an average rate of 25 ft. a day. The crib section was 1,607 ft. long, and progressed at an average rate of 27 ft. a day. The best day's work was slightly over 33 ft., and the whole work completed in 172 working days, at a cost of about 100,000 dols. The tunnel is mainly through clay, but little rock or quicksand being encountered. The engineering of the tunnel was done by City Engineer L. B. Jackson and his assistant, Mr. C. F. Anderson. The two sections met with differences in alignment of less than one-fourth of an inch horizontally or vertically.—In order to give a better entrance from Lake Michigan to the Chicago Drainage Canal than is furnished by the Chicago River it is proposed to cut a channel 22 ft. deep and 250 ft. wide between Twenty-third and Twenty-fourth-streets from the lake to the Chicago River. The Chicago River has been outgrown by lake commerce, and would need an expensive enlargement before it could furnish the minimum amount of water required by the drainage canal. The proposed channel would be about 1½ miles long, and would save traversing four miles of the worst part of the river. The estimated cost of this channel, according to unofficial reports, is 10,000,000 dols., of which 7,000,000 dols. is for the necessary condemnation of property through a densely-populated residence district.—*Engineering Record.*

STAINED GLASS AND DECORATION.

MEMORIAL WINDOW, WESTON FAVELL, NORTHAMPTON. — A window was unveiled at Weston Favell Church recently, as a memorial to the late Rev. James Phillips. The window now newly filled with stained glass is on the south side of the chancel, and is of thirteenth-century date. It is composed of three lancet lights, under a common hood moulding. The treatment adopted in this instance is a combination in each light of a single figure with a subject group below. The centre light contains a figure of Our Lord as the Good Shepherd, and below is a group showing the feeding of the multitude. In the left-hand side-light is St. James the Great with staff, shell, and wallet, and below is the subject of the Transfiguration. In the right-hand light is St. John the Evangelist holding a chalice, and below is the subject of the Last Supper. The work has been executed by Mr. Alexander Hymers, of Chelsea, under the direction of Mr. M. H. Holding, architect, of Northampton.

MEMORIAL WINDOW, PARISH CHURCH, NEWBURGH.—A memorial window has been placed in the south-west side of St. Katharine's Parish Church, Newburgh, in commemoration of the life and labours of the late Alexander Laing, LL.D., banker, Newburgh. The window depicts two of the scenes in the life of Christ, and is based on the text on the scroll at the bottom, "Consider the lilies how they grow." The window was designed and carried out by Messrs. Ballantine & Gardiner, Edinburgh.

MISCELLANEOUS.

THE DISTRICT SURVEYORS' ASSOCIATION.—The members of the District Surveyors' Association and friends dined together on the 17th inst., at the Café Royal, Regent-street, the President, Mr. H. H. Collins, being in the chair. Amongst the visitors who accepted the hospitality of the Association were Dr. Longstaff, L.C.C.; Mr. Payne, Chairman of the Building Act Committee, L.C.C.; Mr. Hudson, member of the Tribunal of Appeal; Mr. Thomas Blashill, Superintending Architect, L.C.C.; Mr. Henry Arthur Hunt, Mr. Andrews, Mr. Goodacre, Mr. Hoole, Mr. M. E. Collins, Mr. A. Collins, and many others. The occasion afforded an opportunity of presenting to the Honorary Secretary, Mr. Benjamin Tabberer, a handsome silver tray, with a suitable inscription engraved thereon, in recognition of his many years' service in that capacity.

OPEN SPACES.—Application has been made for issue of a faculty to lay out as an open space the burial-ground, closed since 1853, attached to SS. James and John's Chapel-of-Ease, Pentonville. It is stated that the Metropolitan Public Gardens Association are prepared to expend about 650*l.* in putting the ground in order, and that the Vestry will undertake its maintenance at a yearly cost of 100*l.* Herein were buried Grimaldi, the clown (1837), and R. P. Bonington, the landscape painter, who died in 1828, aged 27.

IMPROVEMENTS AT POETS' CORNER.—In the House of Commons on the 18th inst. Mr. Bartley asked the First Commissioner of Works whether, in the new dividing wall now being erected to separate the new garden, acquired by public taxation, at the Poets' Corner of Westminster Abbey and the freehold house, No. 5, Old Palace-yard, windows had been pierced with his sanction; whether he was aware that the freeholder and tenant of No. 5, Old Palace-yard were thereby securing light, air, or other easements over the gardens which hitherto were closely covered with buildings, and, if so, whether any and, if so, what consideration the landlord and tenant were paying for the betterment secured to their property at the public expense; and what steps had been taken to secure that any betterment obtained by the landlord and tenant of No. 5, Old Palace-yard, at the public cost, should not hereafter add to the compensation that might be asked by the said landlord and tenant, or their successors, if the site of the house was ever purchased by the public to be added to the Abbey garden.—Mr. Akers-Douglas: To the first paragraph of my hon. friend's question the reply in the affirmative. The freeholder and tenant of No. 5, Old Palace-yard are securing no easements as suggested by my hon. friend. The owner and occupier have agreed that the windows, which have been lately opened, shall be closed within three months of a notice to do so being given by the Commissioners of Works. It has been recently settled that a payment of 1*l.* per annum per window opened over the London parks and gardens shall be paid by all owners of property so benefited; and this annual rental will be levied on the owner and occupier of the house in question.

CITY COMMISSION OF SEWERS.—On the 16th inst. a meeting of the City Commission of Sewers was held at the Guildhall, the chairman (Mr. Benjamin Turner) presiding. A report was brought up from the Streets Committee on the reference relative to the bronze statue of the Queen by Mr. C. B. Birch, A.R.A., presented to the Corporation by Sir A. Seale Haslam, stating that, in their opinion, the most suitable site for it would be at the eastern end of the Victoria Embankment, in the centre of the roadway midway between the abutments of Blackfriars-bridge and the Royal Hotel. The statue would face the north-east. An amendment in favour of the centre of the roadway in the line of traffic between the bridge and New Bridge-street was negatived, it being objected to as requiring a re-arrangement of the rests, and producing serious interference with the traffic.

PRIZE FOR INDUSTRIAL HYGIENE.—The Council of the Society of Arts are prepared to award, under the terms of the Benjamin Shaw Trust, a Gold Medal, or a prize of 20*l.*, "for any discovery, invention, or newly-devised method for obviating or materially diminishing any risk to life, limb, or health, incidental to any industrial occupation, and not previously capable of being so obviated or diminished by any known and practically available means." Further information can be obtained from the Society of Arts, Adelphi, London.

BRITISH GRANITE TRADE.—As a sequel to the strike and lockout in the settmaking industry in the Aberdeen district in connection with the demand of the men for free tools and sharpening, preliminary steps have been taken in Aberdeen for the formation of a granite and whinstone quarrymasters' association. The object will be to embrace quarrymasters in England as well as in Scotland, and the next meeting will be held probably at Carlisle. The Aberdeen Master Masons' Association has resolved—"That the members of this Association bind themselves not to use or encourage in any way the use of Irish and foreign granite, and that the quarriers undertake not to supply materials of any kind to any one who may use such materials." This boycott of Irish and foreign granite will not apply to the monumental trade.

ECCLES ELECTRIC LIGHTING SCHEME.—A Local Government inquiry with regard to an application by the Eccles Town Council for power to borrow 20,000*l.* for carrying out an electric lighting scheme, and 11,348*l.* for other works, was held recently in the Eccles Town Hall, before Mr. G. W. Willcocks, C.E., inspector under the Local Government Board. Mr. G. W. Bailey, the Town Clerk, in support of the application for power to borrow 20,000*l.* for electric light works, said that they did not make their own gas, but obtained it from the Salford Corporation, and the charge at present was 2s. 4d. per 1,000 ft. Therefore there was no question of setting up the works in opposition because of a dear supply of gas. He gave an account of the various measures that had been taken during the past fifteen years with regard to the adoption of a public lighting system in the borough. Several companies, he said, had from time to time made application for powers to come into the borough and set up electric lighting works, and the local governing authority, in order to prevent that, had obtained provisional orders to carry out such works themselves. Some little time ago the Town Council, feeling that something ought to be done, called in Dr. Hopkinson, the well-known electrical engineer, who advised them that they could set up works and light the street lamps, &c., with electricity at practically the same rate as that paid to Salford for the supply of gas, and that, if that were done, within twenty-five years they would be able to redeem the cost of the works. The committee charged with the consideration of a scheme had ultimately adopted one designed by Mr. Clirehugh, which was on a different principle to that proposed by Dr. Hopkinson, but which could be carried out without any increase of the rates. The Council proposed to light all the streets in the borough, and to adapt the present street lamps to incandescent electric lighting purposes. The Council also proposed to supply private consumers either for lighting or motive power. There would be a "compulsory area," with separate wires, but the street lighting throughout the borough would be all under one system. The scheme had had the approval of the Board of Trade.—Mr. Clirehugh, the electrical engineer, in evidence, stated the details and cost of the scheme. The works would have a capacity for lighting 750 public lamps of twenty-candle power, and 3,750 private lamps of sixteen-candle power. With all these in use there would be a good profit. A little over twenty-one miles of street cable would be laid. His estimate of the cost of the scheme was 18,971*l.*

NEW PREMISES FOR THE LEICESTERSHIRE BANKING CO.—Messrs. Mainzer & Co. write:—"In your last issue giving a description of the new premises of the Leicestershire Banking Co., Loughborough, you state that the mosaic pavement is by 'Messrs. Maine & Co.,' which should have been Messrs. Mainzer & Co." The mistake arose from the illegible writing in the account furnished to us.

HOUSING OF THE WORKING CLASSES, LIVERPOOL.—Mr. Rienzi Walton, M.Inst.C.E., and Mr. Theodore Thomson, M.D., held a Local Government Board inquiry on the 16th inst. at the Liverpool Town Hall into the reasons for the application by the Corporation for sanction to borrow 13,000*l.* for the erection of dwellings for persons of the labouring classes. The Deputy Town Clerk (Mr. Pickmere), in the course of his opening statement, said that the money was required for a scheme the Corporation had in contemplation for providing cheap-rented workmen's dwellings on land between Gildart's-gardens and Ford-street, in lieu of others which had been found to be insanitary. The idea of the Corporation was to erect houses of two stories, each containing two two-roomed tenements, which they intended to let at about 2s. 6d. per week per tenement, with a few of a better class at rents running to 4s. per week. Evidence regarding the details of the new buildings proposed to be erected was given by the Deputy Surveyor (Mr. Turton), the City Engineer (Mr. Boulnois), the Medical Officer of Health (Dr. Hope) and others.

NEW STATUE OF THE QUEEN.—Some seven years since, by reason of the fact that the statue of her Majesty then standing in the Royal Exchange had suffered from exposure to the weather, the Gresham Committee resolved, on the advice of the late Lord Leighton, to replace it by a more fitting monument. The committee requested Mr. Hamo Thornycroft, R.A., to execute a statue in marble representing Queen Victoria at the time when the Royal Exchange was opened by her in 1844. The statue was unveiled on Saturday last by the Lord Mayor. The statue, which is of pure Sicilian marble, and has been fashioned from a block weighing nearly 12 tons, depicts her Majesty as she was fifty-two years ago. She is seen wearing her crown and the riband and Order of the Garter, holding in her right hand a sceptre and in her left a small figure of Victory alighting on an orb, emblematic of Government and Universal Dominion. Long, flowing robes sweep the plinth of the monument, the height of which, taken from the base, which is of black marble, being about 18 ft.

PUBLIC IMPROVEMENTS, LLANDUDNO.—Mr. Rienzi Walton, M.Inst.C.E., held an inquiry on the 21st inst. touching an application by the Urban Council to the Local Government Board for sanction to borrow 4,357*l.* for the erection of workmen's dwellings, and 1,170*l.* for improvements at the gas-works. Mr. Conolly, the Clerk to the Council, stated that there had been acquired close to the railway station an area of 2,250 square yards. It was intended to erect nineteen stone cottages in two blocks, the weekly rental to be 5s. 3d. Mr. Stephenson, C.E., who has prepared the plans, stated that the lowest tender received was 157*l.* 17s. 10d. per house.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. H. C. B. Ridges and Mr. A. North, architects, of Worthing, have entered into partnership, and will practice at 34B, Warwick-street, Worthing, under the style of "Ridges & North."

A CHANCE FOR OUR LONDON STATUES.—An interesting experiment is now being tried on the statue of James II., which is the ornament of Whitehall-gardens. Workmen, having carefully cleaned the bronze, which was in a very filthy condition, are now apparently varnishing it, but are in reality painting it with a very thin solution of a certain chemical product, the use of which in such a connexion is the invention of Professor A. H. Church, F.R.S. We believe that one of the latest acts of Lord Leighton was recommending the Office of Works to apply to Professor Church for advice in this matter. The eminent chemist has for years past been experimenting on this mode of preserving the patina of bronze, but has never before had the opportunity of trying it on a public work. It is understood that, when perfectly dry, this delicate coating will take a high and durable polish; and, if so, the question of enabling bronze to endure the London smuts and dirt will, perhaps, be solved. The examination of the statue led to the discovery of a large hole in the shoulder, in which rain-water was settling, and which was disintegrating the mass. This will be stopped up, and the roll in the monarch's hand, which was found to be merely painted wood, will be replaced by a rolled scroll of bronze.—*St. James's Gazette.*

CONDITION OF THE CAM.—The condition of the river at Cambridge will soon be improved, as the town is being sewered on the *Separate* system, and in the future rain water only will be carried to the river. The Governing Bodies of Trinity College and Trinity Hall have instructed Mr. Chas. E. Gritton, A.M.Inst.C.E., of Westminster and Selhurst, to prepare plans and reports for draining those colleges, and to obtain tenders for the necessary works.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—An excursion to Totnes on Saturday last was made by the members of the Devon and Exeter Architectural Society. After visiting the Castle, the party were very kindly conducted over the Church and Guildhall by Mr. T. Windeatt. From Totnes a very pleasant drive was taken to Marldon Church and Compton Castle, a well-preserved relic of the fifteenth century. The return journey was made by Berry Pomeroy Castle, with its picturesque ivy-clad ruins, and Berry Pomeroy Church.

THE BUILDING TRADE STRIKE, PORTSMOUTH.—Through the intervention of the Mayor (Mr. J. J. Young), the builders of Portsmouth and the carpenters and painters now on strike have been brought together. Representatives of both sides held an informal conference in the Mayor's Parlour at the Town Hall on the 16th inst., and talked the situation over. The whole question of the origin of the strike was discussed at some length, but neither side committed themselves to any definite course of action. Before leaving, the Mayor asked both parties to lay the matter before their respective societies, and this, it was understood, would be done. At the conference the masters gave the carpenters' representatives to understand that they would receive a deputation if the men had

anything to suggest. The men say they have nothing to suggest. They have asked for an advance, which has been refused. They adhere to their demand, and it is now for the masters to suggest. The painters, on the other hand, arranged to meet the employers. At the Mayor's conference Mr. Corke intimated that the masters would be pleased to receive a deputation at any time, and that the Committee sitting daily at the Sussex Hotel would meet the deputation. The Painters' Committee afterwards wrote that they would be pleased to avail themselves of the invitation, and a reply came asking them to arrange for their eight representatives to meet the Masters' Committee on Thursday night. The conference was held, and a long discussion took place, but no progress, it is stated, was made towards a settlement of the dispute.

LEGAL.

LORD HASTINGS AND HIS BUILDING PLANS:

CASE IN THE DIVISIONAL COURTS.

THE case of the Queen v. the Tynemouth District Council came before a Divisional Court of Queen's Bench composed of the Lord Chief Justice and Mr. Justice Wills, on the 18th inst., for judgment on an application at the instance of Lord Hastings for a mandamus, directed to the Tynemouth Rural District Council, to approve certain building plans which he had submitted to them. The facts were shortly these:—The complainant is the owner of certain property in the defendants' district, and he desired to put up certain blocks of houses, comprising several streets, in a place which is now open country. He submitted to the defendants plans of the proposed streets with details of the buildings, showing that he intended to construct each house with a separate drain ending at present in the soil of a proposed new street, with no cesspool or other receptacle for drainage. The defendants refused to approve his plans unless he would agree with them for the construction, at his expense, of the necessary main sewer, the existence of which the plans contemplated, with the necessary outfall and other works. It was on this ground only that the approval of the District Council was refused.

The Lord Chief Justice in giving judgment said that the plans submitted did not show that the levels were such as to make the drainage impossible. The question was, could the District Council, which had no objection to the plans for the buildings, decline to approve unless the landowner undertook to provide sewers and outfalls? Such a contention, to his lordship's mind, was unreasonable. It might be that, if only a few houses should be built, provision for drainage could be made cheaply; but if a large building scheme was carried out a drainage area might be declared. It was impossible that the Local Authority, under circumstances such as these, could refuse their consent on the grounds given.

Mr. Justice Wills concurring, the court accordingly ordered that the mandamus should issue to the Council to approve the plans.

Mr. Robson, Q.C., and Mr. A. Glen supported the rule, and Mr. Lawson Walton and Mr. Willes-Chitty, on behalf of the Council, showed cause against.

DISPUTE AS TO AN ARBITRATOR:

CASE IN THE COURT OF APPEAL.

ON Saturday last judgment was given in the Court of Appeal, composed of the Master of the Rolls, and Lords Justices A. L. Smith and Rigby, in re an Arbitration between Meadows and another v. Kenworthy on an appeal from an order of Mr. Justice Cave in chambers refusing an arbitrator. The appellants' case was that they were the contractors for the erection of an arcade at Ashton-under-Lyne for the sum of 13,651*l.* under an agreement, one clause of which provided that in case of a dispute, or difference, arising between Kenworthy or his architect and the contractors, unless it was otherwise provided for, an arbitrator should be mutually agreed upon. The work, after some delays, was completed in 1895, and measurements were taken, and it was submitted that 1,850*l.* was due to the contractors in addition to what had been paid on account, and 250*l.* was claimed by the contractors for delays on the part of the architect and brickmaker. After this had been done, the architect certified for only 288*l.* ignoring the claim altogether. Mr. Justice Cave ruled that the appellants were not entitled to an arbitrator under the 17th clause of the contract, and against that decision they now appealed.

Lord Justice A. L. Smith, in giving judgment for himself and the Master of the Rolls, said that the question was whether the matters out of which the dispute had arisen came within the clauses of the contract. It appeared to him that the architect was the person to decide, and to measure the value of the extras under the contract in question, and therefore any extra work advised by the architect must be measured and valued, and must be certified for by the architect.

Lord Justice Rigby concurred, and the appeal was accordingly dismissed with costs.

MEETINGS.

FRIDAY, JUNE 26.

Association of Municipal and County Engineers.—Annual meeting, Brighton (continued).

Liverpool Architectural Society.—Special meeting to approve of the Report of the Council on the proposed alteration in the City by-laws as set forth in the Town Clerk's letter dated April 25, 1896. 1.30 p.m.

SATURDAY, JUNE 27.

Association of Municipal and County Engineers.—Annual meeting, Brighton (concluded).

London and Provincial Builders' Foremen's Association—The Annual General Meeting, for the election of officers and other business, will be held at the Memorial Hall, Farringdon-road, E.C. 7.30 p.m.

St. Paul's Ecclesiological Society.—Visit to Lingfield. Train leaves Victoria at 2.35 p.m.

TUESDAY, JUNE 30.

Dundee Institute of Architecture, Science, and Art.—Annual General Meeting, for the election of office-bearers and Council for ensuing session. 2 p.m.

WEDNESDAY, JULY 1.

Royal Archæological Institute of Great Britain and Ireland.—(1) Mr. J. R. Mortimer on "The Killing Pits on Goathland Moor, Yorkshire." (2) Professor B. Lewis, M.A., F.S.A., on "The Mosaic of Monnus at Trèves." 4 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

12,873.—LAVATORY BASINS: *J. G. Stidders.*—In order to regulate height of water in basin and prevent passage of effluvia, patentee forms overflow passage with a trap, preferably integral with basin at back, the overflow passage leading from outlet, &c., up the side to the trap, the lip of which is made level with the greatest height to which the water is to be allowed to run in the basin. An opening, with fluid-tight cover, is provided for inspecting and cleaning.

12,081.—LINING TUNNELS, &c., WITH CONCRETE: *G. Burt.*—This invention consists in (1) the application of concrete, &c., to the upper surfaces of tunnels by placing material in a box having a movable bottom, which bottom, after box has been placed in position against part of tunnel, is lifted by mechanical means in order to raise material to surface to be lined; and (2), the apparatus required, comprising a box with movable bottom, with levers or cams for lifting latter, and a stirrup or stirrups adapted to be suspended from bolts for supporting the box.

12,242.—ARTIFICIAL STONE: *E. M. Arndt and Another.*—Patentees convert a mass containing gypsum and caustic lime into a crystallised solid by the gradual introduction thereto of sulphurous acid or a sulphite. To this matrix cinders, sand, slag, infusorial earth, &c., can be added as aggregate.

13,108.—DOOR CHAINS: *W H. Tonks.*—In place of the ordinary longitudinal slotted trough case for the reception of the chain stud an engaging plate is made of a circular domed disc or brass or hard metal in which is formed a spiral or scroll slot. In action chain stud is passed into central enlarged part of disc, and moved along slot nearly through a circle, when the door is rendered so secure as to make the opening thereof from the outside practically impossible.

24,956.—SASH BALANCES: *J. H. Bane and Another.*—Invention consists in a window-sash balance, a pivoted housing, a spring carried thereby, an adjusting device connected with the spring, and adapted for engagement with a fixed support, a friction wheel mounted to revolve within the said housing, and adapted for engagement with a sash disc mounted to revolve in the housing and provided with ratchet wheels and pawls carried by the friction wheels, and engaging with the said ratchets.

5,701.—WINDOWS: *H. Selk.*—This invention applies to hinged windows, and consists in sashes not being fixed to the hinge joints of the window-framing, but swung on free end to two T-like supports lying above and beneath, and turning round hinge rods in the window-framing.

5,904.—AUTOMATIC LOCKING, &c., SASH BALANCE: *R. K. Brown.*—Object of invention is to prevent rattling of sash and secure control of window. Patentee fixes undulating metal rack to vertical stile of sash, and to window frame a spring barrel, hemispherical projections on the periphery of which engage with rack. Bolts provided with spiral springs keep barrel pressed against rack, and the action of the apparatus is controlled by a lever worked by the person operating the window.

6,465.—SHEET METAL ROOFING: *T. Von Kyrlowski.*—Varnished iron sheets are used, and secured to the purlins, and made to interlock by means of hooks and bent-over edges.

2,768.—RESERVOIR PAINTING MACHINE: *J. R. Hamilton.*—Relates to a reservoir painting machine for painting sash-bars of horticultural buildings, &c. The machine is pushed along bars, where three sets of (detachable) brushes, supplied with paint through guide tubes, coat three sides of sash at one operation. A long handle enables the operator to dispense with a ladder.

4,678.—PRODUCING ORNAMENTAL COLUMNS OF ROLLED BAR-IRON: *L. Mannstaedt.*—First by rolling or laminating, patentee produces bars of the cross-section required, and with the desired ornamentation on their one (outer) surface. These are then so wound spirally as to produce a column decorated with any degree of ornament desired. Bulged or undulated columns are also thus obtained.

NEW APPLICATIONS FOR LETTERS PATENT.

JUNE 8.—12,498, J. Hawksworth, Window Fastener 12,528, T. Fuller, Hanging of Window Sashes.

JUNE 9.—E. Chatham, Hand Braces, or Tools for Drilling Holes.—12,668, W. Taylor and J. McLeod, Fastener for Windows, Doors, &c.—12,673, C. Marson, Cement for Plastering on Walls or Ceilings.—12,674, C. Marson, Material for Covering Walls, &c., with Glass in place of ordinary plastering.—12,697, H. Jürgens, Fire-grates.

JUNE 10.—12,799, F. Sage, Stair Treads, &c.

JUNE 11.—12,828, G. Pickles, Wood-sawing Machinery. 12,848, A. Hocking, Waste or Stop Water-Closets.—12,877, J. Russell, Register Stoves or Grates.—12,913, F. Townsend and H. Wheeler, Sash Fasteners.

JUNE 12.—12,938, F. Lynde, Manhole Frames and Covers.—12,966, E. Charlesworth and E. Parkin, Tiles, and in the method of and means for moulding same.—12,993, N. Dawson, Attaching Door-handles to Spindles.—13,022, J. Cummins, Screw Nail.

JUNE 13.—J. Bradbury, Wood-working Machinery.—13,063, N. Pollard, Cleaning Paint or Varnish Brushes.—13,077, H. Wood, Material suitable for use as Cement, Mortar, or in the Manufacture of Bricks or Blocks for building purposes.

PROVISIONAL SPECIFICATIONS ACCEPTED.

2,810, S. Abram, Continuous Down-draught Brick Kiln.—8094, W. Thomson, Lugs or Brackets Cast on Guttering.—9,518, E. Palmer, Reaching, by a Lateral Movement, Elevated Parts of Buildings and other Erections, for the Purpose of Repairing such Buildings and other Erections, and for Painting, &c.—9,580, J. Neech, Combined Manhole Filter and Dirt Box for the Improvement of Sewer Ventilation.—9,967, W. Richardson-Jones, Finger-plates for Doors, &c.—10,285, F. Lynde, Lavatory Basins and Baths, &c.—10,975, R. Swales, Flushing Water-Closets, &c.—11,113, J. Smithies, Joining Pliable Hollow High-relief Materials for Decoration of Walls, &c.—11,119, J. Jones, Presses for Bricks, &c.—11,380, J. Gibson, Securing the Cords of Window Sashes.—11,411, G. Ostius, trading as J. Hall & Co., and T. Read, Construction of Gas Pendants and Chandeliers.—11,492, R. Taylor, junior, and L. Dunkerley, junior, Machines for Sharpening Saws, &c.—11,803, J. Heath and J. Adams, Encaustic or Similar Tiles.—11,983, R. Lawson, Draught, Dust, and Water Excluder.—12,116, C. Mason, Asphalte Pavements.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

11,862, W. Hall, Springs or Spring Devices Applicable for Counterbalancing Window Sashes, &c.—15,102, W. Youlten, Top Sash Openers.—15,256, G. Anderson, Sash Frames of Windows.—6,330, J. Janson, Scaffold for Buildings.—7,032, A. Clark, Treating Wood.—7,393, W. Thompson, Making Inlaid or Mosaic Linoleum.—8,863, W. Pryke and W. Palmer, Eaves' Gutters.—9,407, J. Duckett & Son, Limited, and J. Duckett, Waste or Slop Water-Closets.—10,000, O. Matthieson, Fresco Painting.—10,088, J. Bragger, Water-Closet Valves.—10,139, A. Boult, Flushing Apparatus for Water-Closets, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 4.—By A. MANSELL & Co. (at Ruyton).

Ruyton-xi-Towns, Salop.—Four houses and two shops and 2 a. 0 r. 9 p., f.	£890
"The Admiral Benbow" Inn and 0 a. 1 r. 27 p., f.	1,425

June 9.—By BAXTER, PAYNE, & LEPPER (at Bromley).

Bromley, Kent.—Twelve building plots, f.	746

June 10.—By G. YEATES & SON (at Worcester).

Worcester.—Foregate-st., "The Worcester Public Library" and "Hastings Museum," f.	3,600
Claines, Worcester.—"Merriman's Hill Farm," 29 a. 1 r. 0 p., f.	2,425
Mayfield-rd., three cottages, f.	220
Worcester.—2 and 3, Sansome-st., f., r. 105*l.*	2,000

June 11.—By HARDS & BRADLY (at Bromley).

Bromley, Kent.—7, Johnson-rd., f., r. 26*l.*	310

By MUMFORD & BOND (at Whitchurch).

Whitchurch, Bucks.—House, three cottages and enclosures, 18 a. 0 r. 36 p. f. and c.	2,670

By RICHARDSON & PEARCE-BROWN (at Bubwith).

Bubwith, Yorks.—Freehold farmhouse, cottages, and land, 77 acres, f.	3,373

By WALTER SIMMONDS.

Walworth.—52, 56, and 58, South-st., f., r. 104*l.*	680
Camberwell.—46 and 48, New Church-rd., f., r. 67*l.* 12s.	850
Westmacott-st., f.g.r. 13*l.*, reversion in 52¾ yrs.	400
Southampton-st., f.g.r. 10*l.*, reversion in 60 yrs.	280

By J. R. THORNTON.

Battersea.—47 and 49, Lockington-rd., u.t. 66¼ yrs., g.r. 10*l.*	400

By FAREBROTHER, ELLIS, CLARK, & Co.

Hanwell.—High-st., "The Lawn," and 8 a. 1 r. 3 p., f.	6,950
Bayswater.—110, Westbourne-grove, u.t. 47 yrs., g.r. 8*l.*, r. 120*l.*	1,920
Westbourne-grove, i.g.r. 66*l.*, u.t. 47 yrs., g.r. 11*l.* 10s., with a reversion	1,700

By C. C. & T. MOORE.

Bow.—54, 56, 58, and 60, Coborn-rd., u.t. 76 yrs., g.r. 30*l.*, r. 141*l.*	1,500
Victoria Pk.—31 to 34, Robinson-rd., u.t. 57½ yrs., g.r. 18*l.*, r. 112*l.*	960
Poplar.—68, 70, and 71, Suffolk-st., u.t. 57 yrs., g.r. 7*l.* 10s.	415
Limehouse.—51, 53, 55, and 57, Pigott-st., u.t. 48¼ yrs., g.r. 15*l.* 8s. 9d., r. 112*l.*	900

By NEWBON & Co.

Highbury.—6 to 16 (even), Bryantwood-rd., f., r. 252*l.*	3,620
Euston-rd.—George-st., &c., i.g.r. 84*l.*, u.t. 27½ yrs. g.r. 20*l.*	880
Holloway.—Ingleby-rd., i.g.r. 48*l.*, u.t. 53 yrs. g.r. 16*l.*	710
Barnsbury.—80, Westbourne-rd., u.t. 62 yrs., g.r. 6*l.*, r. 40*l.*	330
Holloway.—43 and 45, Orpingley-rd., u.t. 81 yrs, g.r. 10*l.*	325
Hackney.—8 and 50, Eaton-pl., f.	240
Clapton.—71, Median-rd., u.t. 72 yrs., g.r. 6*l.*, e.r. 30*l.*	325
Kentish Town.—52, Wellesley-rd., u.t. 69 yrs., g.r. 6*l.*, r. 36*l.*	245

By STIMSON, & SONS.

Norwood.—52, Wolfington-rd., u.t. 87 yrs., g.r. 5*l.* 10s., r. 32*l.*	325
1, Royal-circus, u.t. 91½ yrs., g.r. 6*l.*, e.r. 30*l.*	240
18, Canterbury-grove, u.t. 92½ yrs., g.r. 2*l.* 15s.	225
St. Cloud-rd., f.g.r. 27*l.* reversion in 97½ yrs.	760
Peckham.—120 and 122, Barry-rd, u.t. 80 yrs., g.r. 13*l.*, r. 64*l.*	525
Dulwich.—12, Park-rd., u.t. 37 yrs., g.r. 9*l.* 10s., r. 53*l.*	300
Norwood.—284, Holmesdale-rd., u.t. 35 yrs., g.r. 15*l.*, e.r. 75*l.*	350
31, Palace-sq., u.t. 74 yrs., g.r. 10*l.*, r. 30*l.*	140
Camberwell.—144 and 146, New Church-rd., f., r. 62*l.* 8s.	450

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Isolation Hospital	Richmond, Heston, & Isleworth Joint U.D.C.'s	50l. 20l. and 20l.	Aug. 1
*Agricultural School	Trus. of Adam's Charity	40l. 25l. 10l.	Sept. 25

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Road Materials	East Grinstead U.D.C.	W. W. Gale, C E. London-road	June 30
Two Houses, Marshall-street, Bridlington Quay	J. Hotham	J. Earnshaw, Archt. Bridlington Quay	do.
*Covered Seats	Southend Corporation	Boro' Surveyor's Office	do.
*Kerbing, Metalling, &c.	Lewisham Bd. of Wks.	Surv. Dept. Bd. of Wks. Office	do.
Engineer's Materials	Keighley Corp.	W. H. Hopkinson, C.E. Boro' Engr.	July 1
Flagging, Kerbs, &c. Jagger Green	Stainland U.D.C.	J. H. Walker, Surv. Mechanics' Hall, Stainland	do.
Sewage Disposal Works	Ilkeston T.C.	H. J. Kilford, Engr. Town Hall	do.
*Painting at Barracks	War Department	R.E. Office, Colchester	do.
Cottage, Newton Croft, near Aberdeen		Jenkins & Marr, C.E. 16, Bridge-street, Aberdeen	do.
Paving, Flagging, &c. Blucher-street	Waterloo-with-Seaforth U.D.C.	F. S. Yates, C.E. Town Hall, Waterloo	July 2
Baths and Washhouses, Maryhill	Glasgow Corporation	J. Lang, Clerk, City-chambers	do.
Hospital Buildings	Plymouth Corp.	G. D. Bellamy, C.E. 6a, Courtenay-street	do.
*Supply and Fixing Cupboards	Metropolitan Asylums Board	Fever Hospital, Landor-road, Stockwell, S.W.	do.
Shops, Central Stores	Brierfield (Lancs) Co-op. Soc.	W. & J. P. Dent, Archt. Burnley	do.
*Roadmaking	Southwold Corp	Town Clerk's Office	do.
Additions to School, Agnes-road	Barnsley Sch. Bd.	Senior & Clegg, Archt. 15, Regent-street, Barnsley	July 3
Drain Pipes, &c.	Brighton T.C.	F. J. C. May, C.E. Town Hall	do.
Street Works, Springfield-place, &c.	Rothwell U.D.C.	W. Tolley, Surv. Council Offices, Rothwell, Leeds	July 4
Bridge, Padworth	Bradfield R.D.C.	J. Forrester, Surv. Theale	do.
Two Semi-detached Houses, Newmarket-road, Norwich		G. Fitt & Co. Archt. 1, Queen-street, Norwich	do.
School, Brightlingsea, Essex		C. Pertwee, Archt. Chelmsford	do.
Kerbing and Paving Work	Kingstown (Ireland) T.C.	J. Donnelly, Town Clerk, Town Hall	July 6
*Sand, Stone, Drain Pipes, &c.	Vestry of St. Martin's-in-the-Fields	Chas. Mason, C.E. Town Hall, Charing Cross	do.
*Factory, &c. Coventry	Triumph Cycle Co. Lim.	H. W. Chattaway, Archt. Coventry	do.
*Corrugated Iron Building	Hendon U.D.C.	S. S. Grimley, The Burroughs, Hendon, N.W.	do
Macadam	Little Woolton U.D.C.	J. Bourne, Surv. Gateacre, near Liverpool	July 7
Schools, Ednam-road, Dudley		J. T. Meredith, Archt. Bank-buildings, Kidderminster	do.
Mission Hall, Halifax		Utley & Gray, Archt. 10, Waterhouse-st. Halifax	do.
*Three Water Vans	Leyton U.D.C.	W. Dawson, Town Hall	do.
*Chimney Shaft	Edmonton U.D.C.	G. E. Eachus, Town Hall, Lower Edmonton	July 8
*Heating Apparatus	Weston-super-Mare School Board	Price & Wooller, Weston-super-Mare	do.
*Public Convenience	Hackney Vestry	J. Lovegrove. Vestry Hall	do.
*Painting, &c. Works	Greenwich Bd. of Wks	Offices, 141, Greenwich-rd.	do.
*Paving Footways	do.	do.	do.
*Sewer Works, &c.	do.	do.	do.
Police Station	Huddersfield Corp.	Town Clerk, Town Hall	July 9

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Detached House	Woolwich Union	J. O. Cook, 1, Eleanor-road, Woolwich	
*Sinking Bore Hole	Borough of Croydon	Boro' Engr's Office, Town Hall	July 9
*Public Library	do.	do.	July 10
Laundry at Workhouse	Cardiff Union	E. Seward, Archt. Queen's Chambers	do.
*Roadmaking, &c. Dartford	Metropolitan Asylums Board	A. & C. Harston, 15, Leadenhall-street, E C.	July 11
Shop, Coach-house, &c. King's Cross, Halifax		M. Hall, Archt. 29, Northgate	July 13
Additions, &c. to Workhouse, Eastry	Sandwich Union	W. J. Jennings, Archt. 4, St. Margaret's-st. Canterbury	do.
*Additions and Alterations, Workhouse	Eastry Union	W. J. Jennings, 4, St. Margaret's-st. Canterbury	do.
*Engine House, Boiler House, Workshop, &c.	Ramsgate Corp.	W. A. McIntosh Valon, C.E. Ramsgate	do.
*New Municipal Buildings	Llandudno U.D.C.	Silcock & Reay, Octagon Chambers, Milsom-street, Bath	do.
*School	Rainham S.B.	C. Dawson, Barking	do.
*Erection of Technical School	Camberwell Vestry	C. W. Tagg, Clerk, Vestry Hall, Camberwell	do.
*Hospital	Borough of West Ham	L. Angell, Town Hall, Stratford, E.	do.
*Sewers, Manholes, &c.	Uxbridge U.D.C.	Nicholson Lailey, 16, Gt. George-street, S.W.	July 14
*Painting and Cleansing	Bethnal Green Gdns.	D. Papworth, Schools, Leytonstone	do.
*School	Hornsey (U.D.) S.B.	H. C. Clarke, 63, Bishopsgate-street Within, E.C.	do.
Sewering, &c. Several Roads	Ilkley U.D.C.	W. A. Palliser, Surv. Council Offices	do.
*Sewerage and Sewage Disposal	Malvern Link U.D.C.	Baldwin Latham, 13, Victoria-street, Westminster	July 15
*Sewerage Pumping Tank, &c.	Horsham U.D.C.	Taylor, Sons, & Santo Crimp, 27, Gt. George-st. S.W.	July 16
*Refuse Destructor, Chimney Stack, &c.	Handsworth U.D.C.	E. Kenworthy, Council House, Handsworth, Staffs	do.
*Gas Holder Tanks	Southboro' U.D.C.	Corbet Woodall, Palace Chambers, Bridge-street, Westminster	July 20
Wood Paving	Langport (Somerset) R.D.C.	J. T. Hawkins, C E. Somerton	July 21
Shop and Four Houses, Port-road	Carlisle Co-op. Soc.	J. Slack, Archt. 18, Bank-street	No date
Wesleyan School, Stanwell-road, Penarth		Jones & Co. Archt. 18, St. Mary-street, Cardiff	do.
Alterations, &c. to Baptist Chapel Victoria-street, Crewe		G. E. Bolshaw, Archt. 180, Lord-street, Southport	do.
Orphan Homes, Cottingham Road Estate, Hull		W. H. Bingley, Archt. Whitefriargate, Hull	do.
Shops, High-street, Bourton-on-Water, Glos.		Yeates & Jones, Archt. 8, Foregate-st. Worcester	do.
School Extension, St. Cuthbert's, Bradford		H. & E. Marten, Archt. 5, Charles-street, Bradford	do.
*Fitting and Furnishing Library	Leyton U.D.C.	Librarian	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Engineering Draughtsman	Liverpool Corp.	120l. increasing to 150l. per annum	June 30
*Temporary Assistant	Beckenham U.D.C.	3l. 3s. per week	July 1
*Temporary Assistant (Surveyor's)	Hoylake & West Kirby U.D.C.	2l. 10s. per week	July 7
*Teacher of Classes for Manual Training	Croydon School Board	80l. per ann. commencing	No date

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. lv.* ***Contracts, pp. lv., vi., viii., & ix.*** *Public Appointments, pp. xviii & xxi.*

158, Camberwell-rd., area 7,000 ft., f., r. 80l. £1,600
Bermondsey.—427 to 433 (odd), Southwark Pk.-rd., u.t. 56¾ yrs., g.r. 10l. 1,240

By DEBENHAM, TEWSON, & Co.

Hampton Wick, Middlesex.—Lower Teddington-rd., "Broom Mead" and 2 a., f. 4,000
Guildford, Surrey.—Manor-rd., "Ardmore" and 9 a. 1 r. 0 p., f. 3,000
Wandsworth.—54 and 56, St. Ann's-hill, u t. 67 yrs., g.r. 10l., r. 60l. 430
45, 47, and 49, Vardens-rd., u.t. 73 yrs., g.r. 22l. 10s., r. 122l. 14s. 695
Hoxton.—27A, Hoxton-sq., f., r. 56l. 890
Peckham.—54, 56A, 56, 58, and 60, Rye-lane, f., and land in rear, u.t. 11 yrs., g.r. nil, r. 120l. 3,325
Regent-st.—9, Lower John-st., u.t. 76¾ yrs., g.r. 4l. 10s., r. 110l. 1,900
St. John's Wood.—101, Clifton-hill, u.t. 45¾ yrs., g.r. 26l. 405

By SALES & WILTSHIRE.

Lee.—9 and 11, Lampmead-rd., u.t. 75 yrs., g.r. 10l. 415

By BAKER & SONS.

Sutton, Surrey. — Benhilton, freehold building estate, 6½ acres 1,000
Willesden Green.—336, 338, and 340, High-rd., f., r. 107l. 1,340
Chalk Farm.—45, Belmont-street, u.t. 67 yrs., g.r. 6l. 6s, r. 38l. 335

By JONES, LANG, & Co.

St. John's Wood.—Abbey-rd., f.g.r. 83l., reversion in 54 yrs. 3,185
Boundary-rd., f.g.r. 77l., reversion in 54 yrs. 2,615
Belgrave-rd., f.g.r. 249l. 3s., reversion in 54 yrs. 8,455
Bolton-rd., f.g.r. 12l., reversion in 54 yrs. 420
Boundary-rd., a peppercorn rental, reversion in 54 yrs. 340
28, Belgrave-rd., f., r. 40l. 490
Bolton-rd., "Bolton Lodge," f., r. 40l. 440
8, Bolton-rd., u.t. 54 yrs., g.r. 10l. 10s., r. 50l. ... 350
City of London.—1, Bow Churchyard, u.t. 58½ yrs., g.r. 120l., r. 245l. 12s. 380

June 12.—By C. F. MOORE (at Stroud).

Minchinhampton, Glos. — "The Hyde Farm Estate," 454 a. 0 r. 16 p., f. 3,900

June 13.—By MORRIS, SONS, & PEARD (at Taunton).

Taunton, Somerset.—High-st., "Powlett House," f., r. 96l. 1,325

By WALLIS, RIDDETT, & Co. (at Newport).

Carisbrooke, &c., Isle of Wight.—"The Youngwoods" Estate, 372 a. 3 r 20 p., f. £5,100

June 15.—By W. THOMPSON (Mason's Hall Tavern).

Bishop's Stortford, Herts.—"The Railway Hotel," f. (including goodwill) 3,000

By G. W. PARIS.

Gray's Inn-rd.—No. 255, lease, fixtures, and goodwill, u.t. 8 yrs., r. 40l. 160

By BEALE & CAPPS.

Notting Hill.—59, Oxford-gdns., u.t. 79 yrs., g.r. 10l., e.r. 100l. 700
Hampstead.—58, Belsize-rd., u.t. 48 yrs., g.r. 6l. 10s., r. 50l. 430
Tottenham.—13 and 14, Manor-rd., u.t. 81 yrs., g.r. 9l., r. 36l. 8s. 170

By WOODS & SNELLING.

Camberwell.—223 and 274, Camberwell-rd., f., r. 98l. 1,915
Battersea.—56, 58, and 60, Savona-st., f., r. 63. 14s. 500

By H. J. CHEFFINS.

Beckingham, Essex.—"Primrose Hill Farm," 107 a. 3 r., 14 p., f. 600
Steeple, Essex.—"King's Farm," 60 a. 1 r. 8 p., f. 360
Kelvedon, Essex.—"Woodhouse and Wildwoods Farm," 225 a. 0 r., 22 p., f. 1,600
Inworth, Essex.—Freehold cottage and Blacksmith's shop 110

By KING & CHASEMORE.

Shipley, Sussex.—"Honeypoles Farm," 36 a. 3 r. 6 p., f. 440
"The Woodyers," 12 a. 0 r. 18 p., f. 110
Slinfold, Sussex.—"Haves Hill Farm" (part of), 14a. 3r. 38p., f. 370
"Nether Toat," 2 Cottages and 7 a. 0 r. 1 p. 410
Lower Beeding, Sussex.—Enclosures of Land, about 8 a., f. 375

By R. GRAY (at Pickering).

Great Edstone, Yorks.—Freehold farm, comprising 115 a. 2 r. 16 p. 3,040

By H. ESCRITT (at Ancaster).

Sudbrook, Lincolnshire.—House and enclosures of land, 83 a. 0 r. 39 p., f. 2,280

June 16.—By G. STOCKINGS.

Hackney.—152, 152a, 152b, 154, and 156, Mare-st., f., area 4,000 ft., r. 312l. 4,710

By COCKETT & HENDERSON.

Harold Wood, Essex.—High-rd., "Cintra House" and 5 a., f. £2,500
Wanstead.—Grove-pk., "Rossett," f., e.r. 80l. ... 1,455

By EASTMAN BROS.

Dulwich.—11, Belvoir-rd., f., r. 35l. 500

By DEBENHAM, TEWSON, & Co.

Covent Garden.—36, Bow-st., area 1,000 ft., f., r. 342l. 7,250
35, Bow-st., area 930 ft., f. 7,000
Hyde Pk.—7, 17, and 19, Porchester-gardens, f., r. 385l. 6,000
Forest Hill.—Honor Oak-rd., "Fonthill Lodge," and 2½ a., f. 2,600
Finsbury Pk.—29, Woodberry-grove, u.t. 78 yrs., g.r. 6l. 6s. 500
Highgate.—54, North-hill, f., u.t. 9 yrs., g.r. 8l. 5s. 800

By DRIVER & Co.

Notting Hill.—79, High-st., and 57, Uxbridge-st., f., r. 130l. 3,200

By H. DONALDSON & SON.

Dalston.—14 and 23, St. Philip's-rd., u.t 54½ yrs., g.r. 11l. 15s., r. 74l. 780
93, Forest-rd., u.t. 55¼ yrs., g.r. 9l., r. 42l. 390
86, Forest-rd., u t. 54¾ yrs., g.r. 6l. 6s., r. 38l. ... 365
22, Greenwood-rd., u.t. 56¼ yrs., g.r. 5l., r. 38l. . 335

By OSBORN & MERCER.

Skirmet, Bucks.—Eleven freehold cottages, r. 32l. 6s. 8d. 395

By ROGERS, CHAPMAN, & THOMAS.

Kensington.—9 and 11, Cathcart-rd., u.t. 52½ yrs., g.r. 20l., r. 130l. 760
Chiswick.—10, Marlborough-cres., u.t. 78½ yrs., g.r. 10l., r. 50l. 500
33, The Avenue, u.t. 78½ yrs., g.r. 10l., e r. 50l... 400
Kensington.—23, Fairholme-rd., u.t. 76 yrs., g r. 9l., r. 45l. 335

By HUMPHREYS, SKITT, & HUMPHREYS (at Deptford).

Greenwich.—16 to 36 (even), Conley-st., u.t. 74 yrs., g.r. 32l. 4s. 1,300
5 to 11 (odd), Commerell-st., u.t. 58 yrs., g.r. 9l. 13s. 15s, 21, 23, 37, and 39, Commerell-st., u.t. 63 yrs., g.r. 14l. 960
63 and 65, Commerell-st., u.t. 59 yrs., g.r. 6l. 6s. 300

By J. C. PLATT (at Hammersmith).

Hammersmith.—13, 14, and 15, George-st., u.t. 19 yrs., g.r. 4l. 15s. 145

Shepherd's Bush.—49 and 51, Abdale-rd., u.t 84 yrs., g.r. 11*l.* 375

By Messrs. COBB (at Rochester).

Snodland, Kent.—An enclosure of land, 4 a. 2 r. 9 p., f. 1,425

New Brompton, Kent.—A block of building land, f. 300

Strood, Kent.—London-rd., house, shop, three cottages, and plot of land, 1 a. 2 r. 23 p., f. 3,250

Strood Hill.—An enclosure of land, 2 a. 0 r. 5 p., f. 1,800

By Messrs. CRONK (at Tonbridge).

Plaxtol, Kent.—Five cottages and enclosures of land, 23 a. 1 r. 7 p., f. 1,150

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent, r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I.	load	12/0/0 16/0/0
Sequoia, U.S.ft.cu		2/0 2/1
Ash, Canada load		3/0/0 4/5/0
Birch, do.		3/10/0 5/5/0
Elm, do.		3/15/0 5/0/0
Fir, Dantsic, &c..		1/10/0 3/15/0
Oak, do.		2/5/0 3/15/0
Canada		5/15/0 7/5/0
Pine, Canada red		0/0/0 0/0/0
Do. Yellow		2/10/0 4/15/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga &c., log		2/5/0 4/10/0
Odessa, crown		2/5/0 4/10/0
Deals, Finland 2nd & 1st std	ton	7/10/0 9/0/0
Do. 4th & 3rd		7/10/0 8/10/0
Do. Riga		7/10/0 8/10/0
St. Petersburg, 1st yellow		10/10/0 13/0/0
Do. 2nd yellow		8/10/0 10/10/0
Do. white		8/10/0 10/0/0
Swedish		7/10/0 16/0/0
White Sea		8/10/0 15/10/0
Canada, Pine 1st		23/5/0 23/10/0
Do. do. 2nd		16/0/0 17/0/0
Do. do. 3rd, &c.		8/0/0 10/15/0
Do. Spruce, 1st		9/0/0 10/10/0
Do. do. 3rd and 2nd		7/10/0 8/10/0
New Brunswick		7/0/0 8/0/0
Battens, all kinds		5/0/0 20/0/0
Flooring boards, sq., 1 in. prep.		0/9/6 0/14/6
1st		0/9/6 0/11/6
Do. 2nd		0/6/0 0/11/6
Other qualities		0/5/0 0/6/6
Cedar, Cuba, .ft.		4½ /5
Honduras, &c.		/4 /5
Mahogany, Cuba		4½ /6
St. Domingo cargo av.		4½ 1/3
Mexican, do. do.		/4 /5
Tobasco, do. do.		/5 /7
Honduras, do. ..		/5 /6½
Box, Turkey ton		4/0/0 15/0/0
Rose, Rio		7/0/0 16/0/0
Bahia		6/0/0 15/0/0
Satin, St. Doming		0/0/7 0/1/0

TIMBER *(continued)*.		
Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian ..	0/0/3	0/0/7
METALS.		
Iron—Pig, in Scotland	ton	2/6/c½ 2/6/1½
Bar, Welsh, in London		5/12/6 5/15/0
Do. do. at works in Wales		5/2/6 5/5/0
Do. Staffordshire, in London		6/0/0 6/10/0
COPPER—British cake and ingot		53/5/0 53/10/0
Best selected ..		53/10/0 53/15/0
Sheets, strong..		60/c/o 0/0/0
Chili bars		49/10/0 49/11/3
YELLOW METAL	lb	0/0/5 0/0/5½
LEAD—Pig, Spanish	ton	11/0/0 11/5/0
English com. brands		11/2/6 11/3/9
Sheet, English 6 lbs. per sq. ft. and upwards ..		13/0/0 0/0/0
Pipe		13/10/0 0/0/0
ZINC—English sheet	ton	20/10/0 21/0/0
Vieille Montagne		21/15/0 0/0/0
Spelter		18/6/3 18/8/9
TIN—Straits		61/2/6 61/13/9
Australian		62/5/0 62/15/0
English Ingots..		64/15/0 66/1. 0
Banca		62/10/0 63/0/0
Billiton		62/0/0 62/5/0
OILS.		
Linseed	ton	17/10/0 18/2/6
Cocoanut, Cochin		26/10/0 26/15/0
Do. Ceylon		22/10/0 0/0/0
Palm, Lagos		20/15/0 c/0/0
Rapeseed, English pale		23/10/0 23/15/0
Do. brown		22/0/0 22/5/0
Cottonseed ref. ..		15/15/0 16/5/0
Oleine		17/0/0 18/10/0
Lubricating U.S.		0/6/0 0/7/3
Do. black		0/4/9 0/6/6
TAR—Stockholm barrel		19/6 1/0/0
Archangel		0/14/6 0/0/0
TURPENTINE—(American)	ton	19/17/6 c/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

ABER (North Wales).—For the erection of a new chapel for the Calvinistic Methodists. Mr. Richard Davies, architect, Bangor:—

Erasmus Jones	£1,070	Watkin Jones	£840
Jones & Williams	1,030	Owen Griffith	898
Evan Jones	1,020	David Owen, Llandegfan*	855

* Accepted.

ABERDEEN.—For additions to farmsteading, Meikle Colp, Turriff, Hatlow Estate, for Mr. Garden A. Duff. Mr. James Duncan, architect, Turriff:—

Masonry.

Alex. Massie	£151 10 0	P. Christie, Turriff*	£144 0 0
John Paterson & Son	148 13 6		

Carpentry.

Wm. Fowlie	£239 0 0	Wm. Gall	£216 0 0
Joseph Rae	219 10 6	Skene & Booth, Turriff*	215 10 0

Slating.

John Gilespie	£144 6 0	John Gammack & Co., Turriff*	£144 0 0

[Total, £503 10]

* Accepted.

ASHBURTON (Devon).—For alterations, &c., to Wesleyan Chapel, for Trustees. Mr. John Endacott, Ashburton:—

Yeo	£374	Boon	£295
Stevens	307	Lear, Ashburton*	289

* Accepted.

AYR (N.B.)—For the construction of about four miles of sewers, for the Commissioners. Mr. John Eaglesham, C.E., Town Chambers, Ayr:—

David Shanks	£3,820 5 5	R. C. Brebner	£2,999 18 7
John Paterson & Son, Ltd.	3,816 18 11	D. Messer & Co. ..	2,823 18 6
William Simpson	3,554 12 7	Robert Stevenson ..	2,757 9 6
James Osborne	3,247 1 0	Charles McAndrew	2,628 7 8
Thos. Crawford & Son	3,166 15 6	James Miller, Kirkintilloch*	2,592 7 6

* Accepted.

BERVIE (N.B.).—Accepted for additionsto Arbuthnott School, for School Board of Arbuthnott. Mr. John Sim, C.E., Montrose:—

Masonry.—James Gordon, Bervie £118

BRISTOL.—For shop fittings, 47 and 48, Wine-street, Bristol; also blinds, fascias, stall-boarding, &c. Mr. Sydney J. Wilde, architect, Weston-super-Mare:—

	Fittings.	Blinds, &c.
Bartlett & Sons	£574 17 6	
Parnall & Sons	562 0 0	
R. F. Ridd	549 0 0	£170 0
T. E. Ellison & Co.	542 10 0	164 0
R. Wilkins & Sons*	528 0 0	166 13

* Accepted.

CARLISLE.—Accepted for additions to Primitive Methodist Chapel and School, Cecil-street. Mr. H. Higginson, architect, 20, English-street, Carlisle. Quantities by the architect:—

	£ s.
Builder.—T. Lairg, Denton-street, Carlisle	242 0
Joiner.—Jas. Little, Bridge-street, Carlisle	438 0
Plumber.—Wm. Anderson, Lowther-street, Carlisle	46 0
Plasterers.—S. Ferguson & Sons, Denton-street, Carlisle	98 10
Painter.—R. S. Kirk, Lonsdale-street, Carlisle	51 10
Total	876 0

Slater's work to add.

CARMARTHEN.—Accepted for the erection of a residence, Penllwyn.road, for Mr. C. W. Jones. Messrs. George Morgan & Son. architects, 24, King-street, Carmarthen:—

Thomas & John Brown, Llanelly £2,675

CASTLEFORD.—Accepted for the erection and completion of new business premises and workshop. Carlton-street, Castleford, for Mr. H. Drake. Mr. George F. Pennington, architect, Bridge-street, Castleford:—

Brick and Masonry Work.—Enos Wright
Carpentery and Joinery.—F. S. Gregory
Plumbing and Glazing.—George Bateson
Plastering.—Messrs. T. Smithies & Son
Slating.—James Allison
Painting.—John Forster
} £650

CASTLEFORD.—Accepted for the erection of swimming baths, Glebe-street, Castleford, for Mr. James Allison. Mr. George F. Pennington, architect, Bridge-street, Castleford:—

Brick Work.—A. Broome
Joinery.—D. Terry & Sons
Plumbing.—W. Wilson & Son
Slating.—J. Allison
Painting.—John Forster
Iron Foundry.—A. Oakes & Son
} £700

EAST COWES (I. of W.).—For repairing sea-wall, also for sewering, paving, &c., Maresfield and Clarence-road, &c., for the Urban District Council. Mr. W. Stringfellow, surveyor, Castle-street, East Cowes:—

Repairing Sea-Wall, &c.

F. Reeks	£192	Saunders & Co., Bournemouth*	£156 0
		W. W. Batten	141 10

[Surveyor's estimate, £170]

Kerbing and Channelling.

F. Reeks	£607	W. W. Batten	£423 9
Brading & Son	497	J. A. Attrill	381 0
Heyden	495	Saunders & Co.*	322 0

[Surveyor's estimate, £414 5s.]

Sewerage Works.

Brading & Son	£350 0	Saunders & Co.	£285 0 0
F. Reeks	307 0	Heyden	259 10 0
W. W. Batten	294 13	J. A. Attrill*	223 7 6

[Surveyor's estimate, £225 10s. 6d.]

Fencing at Recreation-ground, &c.

F. Reeks	£127 0	Saunders & Co.*	£116
W. W. Batten	119 7		

[Surveyor's estimate, £108. 15s.]

* Accepted.

EXMOUTH.—For the repair and maintenance of rural and main roads for the Urban District Council. Mr. W. H. Beswick, C.E., Council Offices, Exmouth:—

Exeter Main Road.

J. Stevens	£105 0 0	T. Ebdon	£88 0 0
W. Sansom	93 18 9	J. Perry, Lympstone*	73 0 0
W. Sage	90 0 0		

Salterton Main Road.

W. Sansom, Exmouth* £276 7 6

Withycombe Parish Roads.

J. Stevens	£173 0	T. Ebdon	£145 10
W. Sage, Withycombe*	140 0		

Littleham Parish Roads.

T. Hillman, Littleham* £115

* Accepted.

FOSDYKE.—For building a house at Fosdyke, for the Trustees of the River Welland Outfall. Mr. R. H. H. Hand, architect, Spalding:—

Shewin	£379 0	Langley	£314 15
King	359 10	Dawson Bros.	297 12
Pick	340 0	Cade	278 0
Darby	325 0	Perkins, Spalding*	270 0
Bateman	320 0		

* Accepted.

GLASS HOUGHTON (Yorks.).—For alterations to Wesleyan Chapel. Mr. G. F. Pennington, architect, Castleford:—

Brickwork.—R. Walker & Sons, Beancroft-rd., Castleford
Carpentry and Joinery.—F. S. Gregory, Beancroft-rd., Castleford
Plastering.—G. W. Binns, North-st., Castleford
Plumbing.—W. Wilson & Sons, Eastfield-works, Castleford
Slating.—J. Allison, Cambridge-st., Castleford
} £200

HERTFORD.—For the erection of retort house, coal stores, &c., for the Hertford Gaslight Company. Mr. Robert Watson, engineer, Gasworks, Hertford:—

Rayment & Son	£1,348 10	H. Norris, Hertford*	£959 0
Ginn & Son	1,135 0		

* Accepted.

HINDLEY (Lancs.).—For the erection of machine-office, store-rooms, &c., for the Urban District Council. Mr. Alfred Holden, C.E., Council-offices, Hindley:—

Saml. Gregory	£402 0 8	Brown, Phillips & Co., Wigan (accepted)	£375 6 0
J. Dorkin	385 0 0		

ILFORD (Essex).—For making up, levelling, sewering, &c., Birkbeck and several other roads, for the Urban District Council. Mr. Peter Watkins, Surveyor to the Council. Quantities by Mr. Baldwin, Road Surveyor to the Council:—

J. Burrill	£5,424 19 9	W. Griffiths	£3,583 1 8
J. Jackson	4,545 2 9	D. S. Jackson	3,502 15 10
S. Adams	4,340 5 5	W. Gibbs & Co., Ilford*	3,454 17 1
G. Wilson	3,859 14 4		
R. Stroud	3,752 19 5		

* Accepted.

ILKESTON (Derby).—For the erection of detached villa residence, Stanten-road. Messrs. George Haslam & Son, architects, Euclid House, Ilkeston:—

Hazlewood & Marson	£855 13 6	John Harper & Co., 1, Orchard-street, Ilkeston*	£694 0 0
Warwick Husband	845 0 0		
W. V. Ireson	830 0 0		

* Accepted.

ILKESTON (Derby).—Accepted at a schedule of prices for preliminary works in the erection of a Wesleyan church, Bath-street. Messrs G. Haslam & Son, architects, Euclid House, Ilkeston:—

Building retaining walls and under-building adjoining premises.—Builder, W. V. Ireson, East-street, Ilkeston.
Excavating.—Contractor, Geo. Goode, Nottingham.
Sewering, Metalling, &c.—Contractors, Hawley & Son, Ilkeston.

LANCASTER.—For alterations, &c., to "The Spink Bull" inn, China-lane. Mr. John Cook, Borough Surveyor, Lancaster:—

Masonry.—Thomas Kitchen	£163 3 4
Joinery.—Ed. Thompson	27 6 0
Plastering.—Thos. Cross & Sons	7 9 0
Plumbing.—W. Abbott & Co.	7 19 4
	£205 17 8

[All of Lancaster.]

LEAMINGTON.—For sinking a well 8 ft. diameter and 150 ft. deep, for the Corporation. Mr. De Normanville, Engineer, Town Hall, Leamington:—

H. Bowman	£ 351 0 0	Samuel Taylor, Stair Foot, near Barnesley*	£120 7 8
J. H. Vickers, Ltd.	1,345 0 6		
C. Chapman & Son	£1,252 0 0	Samuel Turner	£1,033 0 0

* Accepted.

LONDON.—For the execution of roof work, pulling down houses, &c., Borough Market, for the trustees. Mr. A. T. Walmisley, M.Inst.C.E., 9, Victoria-street, Westminster, S.W.:—

Chessum & Sons, Haggerston.—*Main structure*	£10,615 0 0
Cellars	3,034 0 0
Extra for Braby's system of covering	159 0 0
The Thames Ironworks, Blackwall.—*Main structure*	9,000 10 7
Cellars	4 817 12 1
Extra for Braby's system of covering	235 13 2
Matthew T. Shaw & Co., Mullwall.—*Main structure* (accepted)	7,533 0 0
Cellars (decision deferred)	2,766 0 9
Extra for Braby's system of covering	253 10 0

LONDON.—For general repairs and decorating at 57, Montague-square, W. Mr. Edward A. Gruning, architect:—

F. Giles & Co.	£458 0 0	H. & J. Cooper	£427 18 6
J. Kinninmont & Sons	439 0 0		

LONDON.—For external painting, &c., at the Stock Exchange Mr. R. Langton Cole, architect:—

J. Kinninmont & Sons	£1,498	Battam & Heywood	£1,013
Killby & Gayford	1,035	Colls & Son	990

LONDON.—For the erection of a block of seven warehouses on a site fronting Bell-street and French-alley, Golden-lane, E.C., for Mr. W. R. Sutton. Mr. John Groom, architect. Quantities prepared by Mr. Henry Theobald, F.S.I., 48, Finsbury-pavement, E.C.:—

Bywaters	£40,566	Patman & Co.	£38,559
Holloway Bros.	39,000	Lawrance & Sons	38,449
Mowlem & Co.	38,970	Mattock Bros	38,355
B. E. Nightingale	38,585	H. L. Holloway*	38,000

*Accepted.

LONDON.—For sanitary works at Mayfield Lodge, 93, Addison-road, Kensington, for Mr. J. Girdwood, J.P. Mr. Walter J. Ebbetts, architect and surveyor, Savoy House, 115, Strand, W.C.

Macey & Son	£225	Bolding & Sons (accepted)	£195
Geo. Jennings	210		

LONDON.—For alterations and additions to the "Denmark Arms" public-house, Barking-road, East Ham, E., for Mr. A. Smith. Mr. Fred. A. Ashton, architect, 3, Crooked-lane, E.C.:—

W. J. Maddison	£721	W. Shurmur	£618
J. & H. Cocks	650	W. Watson*	595
T. Welsh & Son	636		

* Accepted.

LONDON.—For paving the footways of parts of Humber-road, &c., Greenwich, for the board of Works:—

	Humber-road.	Armitage-road.	Collerston-road.	Selcroft-road.
John Mowlem & Co., Grosvenor Wharf, Westminster, S.W.	£187 ..	£92* ..	£77* ..	£969
Arthur Thomas Catley, 23, Lloyd-square, W.C.	184* ..	95 ..	81 ..	109
Messrs. Fry Brothers	199 ..	111 ..	85 ..	109
Mr. William Wadey	.. ..	115 ..	95 ..	119

* Accepted.

LONDON.—For pulling down and clearing away old buildings at the Workhouse, Northumberland-street, W., for the Guardians of St. Marylebone Parish. Mr. A. Saxon Snell, architect:—

J. Allen, Humbolt-road, Hammersmith*	£155	Boyer & Sons	£181
Wimpey & Co.	185	Charles Wall	50
		H. Wall & Co.	40

*Accepted.

LONDON.—For the erection of a gasmeter-testing station at Rosebery-avenue, for the London County Council:—

T. L. Green	£6,257	G. Munday & Sons	£6,698
Scharien & Co.	6,371	J. Shillitoe & Sons	8,250

LONDON.—For painting and repairs to the casual wards, Macklin-street, for the Guardians of St. Giles and Bloomsbury:—

Bartlett & Co., Brixton £140

LONDON.—For the execution of paving and sewerage works, Orchard-place, All Saints, for the Poplar Board of Works. Mr. G. F. Holt, surveyor. Quantities by surveyor:—

Paving.

Works Department of the Board*	£367 10	A. & H. Rutty (informal)	£358 0
		G. I. Anderson	355 0

Sewer.

Works Department of the Board*	£162	G. I. Anderson	£125

* Accepted.

LONDON.—For alterations and repairs to Nos. 13 13A, 15, and 17, Peckham Rye, S.E., for Messrs. Wm. Humphrys & Son. Mr. J. R. Manning, architect, Milkwood Estate Office, Herne Hill, S.E.:—

	Repairs, &c.	New Shop Front.	Total.
Battley, Sons, & Holness	£419 0	£91 0	£510 0
Aldridge Bros.	345 0	69 0	414 0

	New Jeweller's Shop.	Altering old do.	Total.
F. Sage & Co.	£64 0	£85 0	£149 0
Walter Thompson	—	—	119 10

LONDON.—For alterations and additions at No. 20, Gloucester-square, Hyde Park, W. Mr. Robert Reid, surveyor:—

Bywaters & Sons	£3,360	D. Charteris	£3,124
J. Kinninmont & Sons	3,343	Horton	3,030
W. Burton	3,134		

LONDON.—For pulling down and rebuilding three houses with stabling in rear, Nos. 24, 26, 28, Menoth-street, Bethnal Green, for Mr. George Short. Mr. Joseph G. Needham, architect and surveyor, 11, Powerscroft-road, Clapton, N. Quantities by Mr. J. R. Hunt, surveyor, 4, Mount-place, Whitechapel, E.:—

R. & E. Evans	£2 998	W. Lawrence	£2,433
H. Higgs	2,652	Messrs. Knight & Son	2,379
J. F. Holliday	2,564	W. Johnson	2,142
Harris & Wardrop	2,447	W. Wells (accepted)	1,890

LONDONDERRY.—For the erection of Ebrington Presbyterian church and lecture hall, Waterside. Mr. Barker, architect, 25, Orchard-street, Londonderry:—

Robert Colhoun, Strand-road, Londonderry £2,540

For church only. Heating, plumbing, and gas-fitting not included.

MEXBOROUGH (Yorks.).—For levelling, kerbing, channelling, &c., Hartley-street, for the Urban District Council:—

G. Eyre, Sheffield £448 18 6

NEW BROMPTON. (Kent).—For the erection of 21 houses. Mr. E. J. Hammond, architect, New Brompton:—

C. E. Skinner	£4,100	F. A. Hammond	£3,390
H. E. Phillips	4,095	H. Harris, Gillingham*	3,500
E. W. Filley	3,760		

* Accepted.

NEWCASTLE-ON-TYNE.—For business premises in Bath-lane, for Mr. H. Moat. Messrs. Badenoch & Bruce, architects, 21, Pilgrim-street, Newcastle-on-Tyne :—

John Ferguson	£844 19 2	J. W. Cutter	£751 12 6
John Jackson	822 16 5	E. & T. George	749 0 0
N. W. Maughan	806 12 11	Worley & Son	739 5 5
Anderson & Slater	774 1 0	Edward Nixon	700 0 0

NEWCASTLE (Staffs).—Accepted for additions, &c., to "Seabridge," near Newcastle, for Sir Lionel Pilkington, Bart. Messrs. Wood & Heutchings, architects, Tunstall :—

Yorke & Goodwin, Tunstall £1,423 0 0

NORMANTON.—Accepted for additions and alterations to school, Loscoe, for the Ackton School Board. Mr. Geo. Robson, architect, Whitwood :—

W. Wilson & Son, Castleford £190 7 7

PENMAENMAWR (N. Wales).—Accepted for the erection of three shops. Mr. Richard Davies, architect, Bangor :—

Rowland Roberts, Maengwyn, Penmaenmawr, N. Wales .. £782

PORTLAND (Dorset).—For the supply of granite macadam and Portland cement for one year, for the Urban District Council. Mr. E. J. Elford, C.E., Surveyor, Portland :—

Portland Cement.

	Per ton.		Per ton.
Bagg & Sons	£2 5 0	Francis & Co., Newport,	
Betts & Co.	1 17 6	I.W. (accepted)	£1 16 10

PORTLAND.—For the supplying of granite macadam for the year ending July 20, 1897, for the Portland Urban District Council. Mr. Ernest J. Elford, C.E., Engineer and Surveyor :—

	2 in. maximum gauge.	1½ in. maximum gauge.	1 in. screenings.	¼ in. screenings.
	Price per ton. s. d.	Price per ton. s. d.	Price per ton. s. d.	Price per ton. s. d.
Mowlem & Co.	9 9	9 9	6 3	6 3
Rowe & Mitchell	10 0	10 5	7 0	6 6
R. L. Fennings	10 0	10 6	7 6	6 6
W. Griffiths	10 6	10 6	7 0	7 0
Narborough Granite Co.	14 9	14 10	12 8	12 8
Mendip Granite Co.	6 9	7 0	6 9	6 9
A. H. Douglas	10 6	10 9	8 6	8 0
L. Sommerfield	9 9	10 3	6 5	6 9
Sandell Bros.	9 0	9 10	8 3	7 9
Fry Bros	10 9	10 0	8 0	6 6
W. F. Manulle	10 4	10 4	6 9	6 9

REIGATE (Surrey).—For the erection of dwelling-house, coach-house, and stables, High Trees Estate, Reigate. Mr. Gerard D. Morrison, architect and surveyor, Reigate :—

J. J. Carrick £2,385
D. Debenham, Betchworth (accepted) 2,075

ROMSEY (Hants).—For alterations to school buildings and erection of cookery class-room, Abbey Churchyard, for the Managers of the National Schools. Mr. James Jenvey, architect, Market-place, Romsey :—

W. Roles & Sons ..... £315 | Goulding & Son, Romsey* .. £199

* Accepted.

SOUTHALL.—For laying on water supply mains, and erecting cast-iron tanks at the Schools, Southall, for the Guardians of St. Marylebone Parish. Mr. A. Saxon Snell, architect :—

J. & F. May	£1,451	Rosser & Russell	£1,160
Beck & Co.	1,377	Berry & Sons, Westminster*	1,156
Fraser & Son	1,244		

*Accepted.

SPALDING.—For the erection of stabling, club-room, &c., at the "Black Horse Inn," Whaplode Drove, for Mr. A. Smith. Mr. R. H. Holmes Hand, architect, 6, Double-street, Spalding :—

W. Leveley	£315 0	S. Allister, Sutton St. Edmunds*	£245 0
Solden Hipwell	299 0	King	243 10
W. Judge	278 10		
T. & G. Money	275 0		

* Accepted.

SPALDING.—For erecting a farmhouse at Broadwater, Moulton, for Mrs. Johnson. Mr. R. H. H. Hand, architect, Spalding :—

W. Jepson	£297 0 0	King & Smith	£244 19 3
Dawson Bros.	287 10 0	P. Bone	234 16 0
C. Watson	255 0 0	King & Alcock, Moulton and Whaplode*	226 10 0
W. Baker	248 0 0		
J. Fawn	246 10 0		

* Accepted.

STOCKPORT.—For the erection of administrative block of buildings at the hospital, Dialstone-lane, for the Corporation. Mr. John Atkinson, C.E., Borough Surveyor, St. Peter's Gate, Stockport :—

Messrs. J. & J. Lee	£2,398 4 11	Daniel Eadie	£2,335 0 0
James Robertson	2,390 0 0	Messrs. W. C. Broadhurst & Co., 2, Shaw Heath, Stockport*	2,270 0 0
Josiah Briggs	2,376 0 0		
Wm. Pownall	2,340 14 0		

* Accepted.

THORNTON HEATH.—For alterations at the "Prince of Wales" Inn, Thornton Heath, Surrey, for Nalder & Collyer's Brewery Company, Limited, Croydon. Mr. Robt. M. Chart, architect and surveyor, Croydon and Mitcham :—

Harding & Son	£129 15	Hanscombe & Smith	£123 10
Smith & Son	125 0	E. Goulder	118 0

[All of Croydon.]

TOW LAW (Durham).—For additions, &c., "Cattle Mart" Hotel. Messrs. Joseph Potts & Son, architects, 57, John-street, Sunderland. Quantities by the architects :—

George Manners	£355 0	Thos. Westgarth, Tow Law*	£251 4
Ed. Rutter & Son	343 10		
William Lister	284 0		

* Accepted.

TYLORSTOWN (Rhonddafach). — For the erection of new vestry for the Welsh Baptist chapel committee. Messrs. Griffiths & Jones, architects, Pontypridd and Ton-y-pandy :—

Rees Bros.	£1,286	Edw. Davies & Son, Treherbert*	£1,025
T. Owen Brown	1,285		
W. T. Humphries	£1,200		

* Accepted.

WESTON-SUPER-MARE.—For alterations and additions to "Totterdown," Uphill. Mr. Sydney J. Wilde, architect, Weston-super-Mare :—

Chas. Taylor	£4,320	E. Love	£3,480
John Perkins	3,768	Wm. Cowlin & Son	3,460
Hatherly & Carr	3,637	Wm. Church	3,419
H. A. Forse	3,633	R. Wilkins & Son	3,379
Love & Waite	3,550	A. J. Beavan	3,220
Henry Rossiter	3,485		

[The above estimates are for covering the roof with slates.]

For Reduced Scheme.

A. J. Beavan ..... £2,745 | R. Wilkins & Sons* £2,685

* Accepted.

WHITBY.—For the erection of a church, Egton. Mr. E. H. Smales, architect, 5, Flowergate, Whitby :—

Robinson Harland	£383 10	John Hutchinson, Builder, Sleights, nr. Whitby*	£362 0
Charles Winterburn	375 0		

* Accepted.

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H. C.—J. J. and M.—T. F.—R. J. W.—T. H. F.—J. C. (amounts should have been stated). "Architect" (no name and address enclosed. T. H. M. (your letter is hardly to the point in regard to the special competition discussed).

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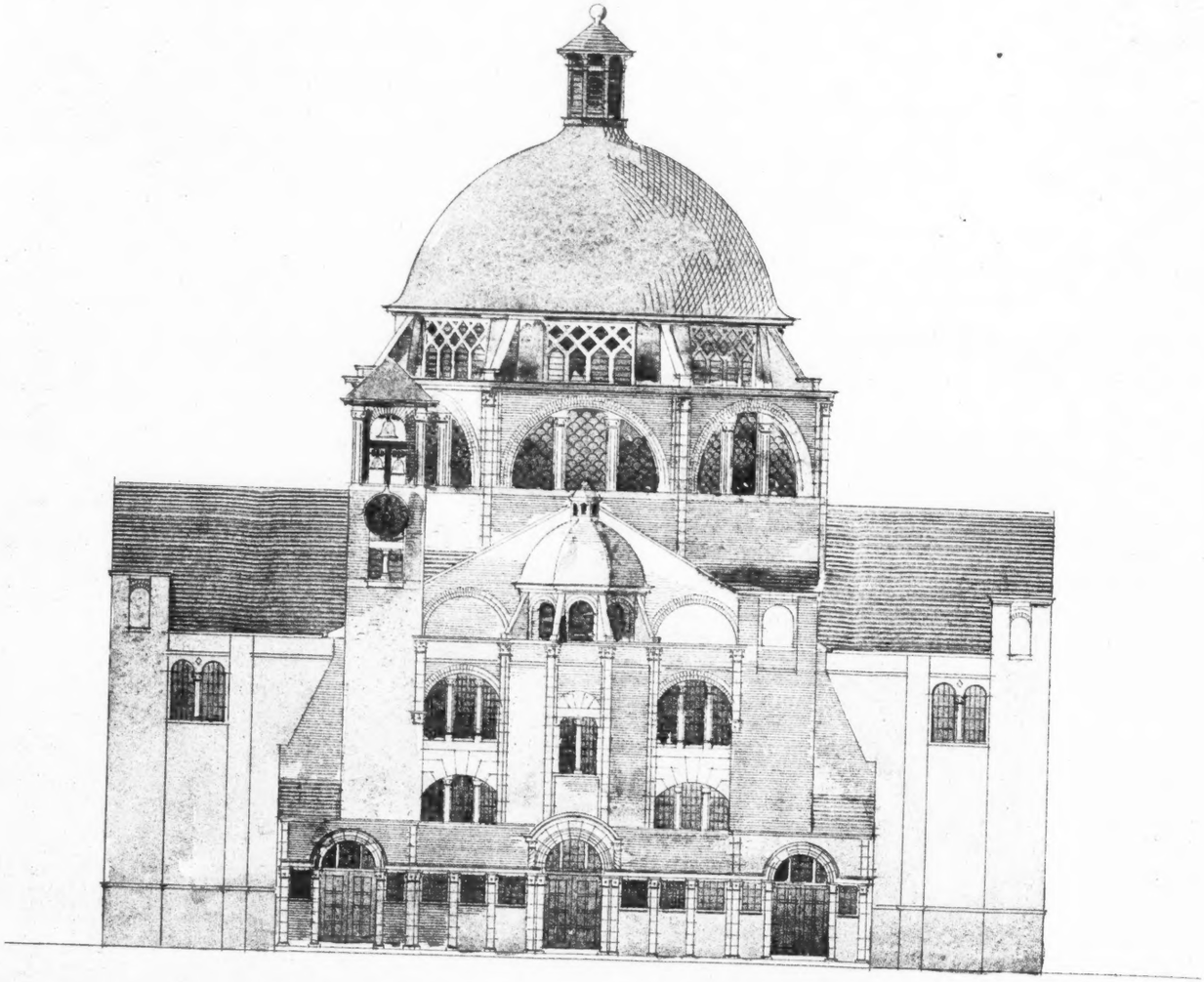

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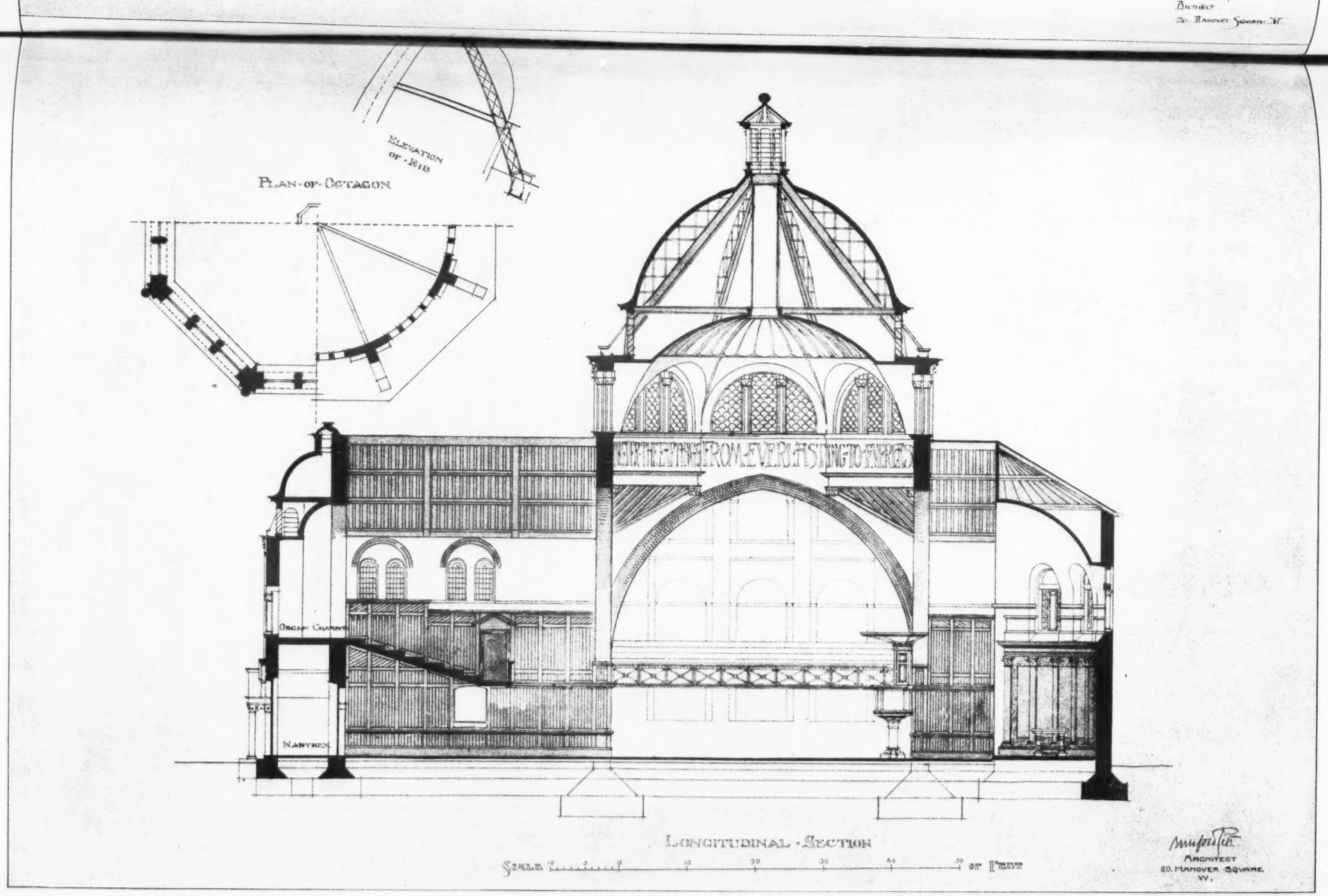

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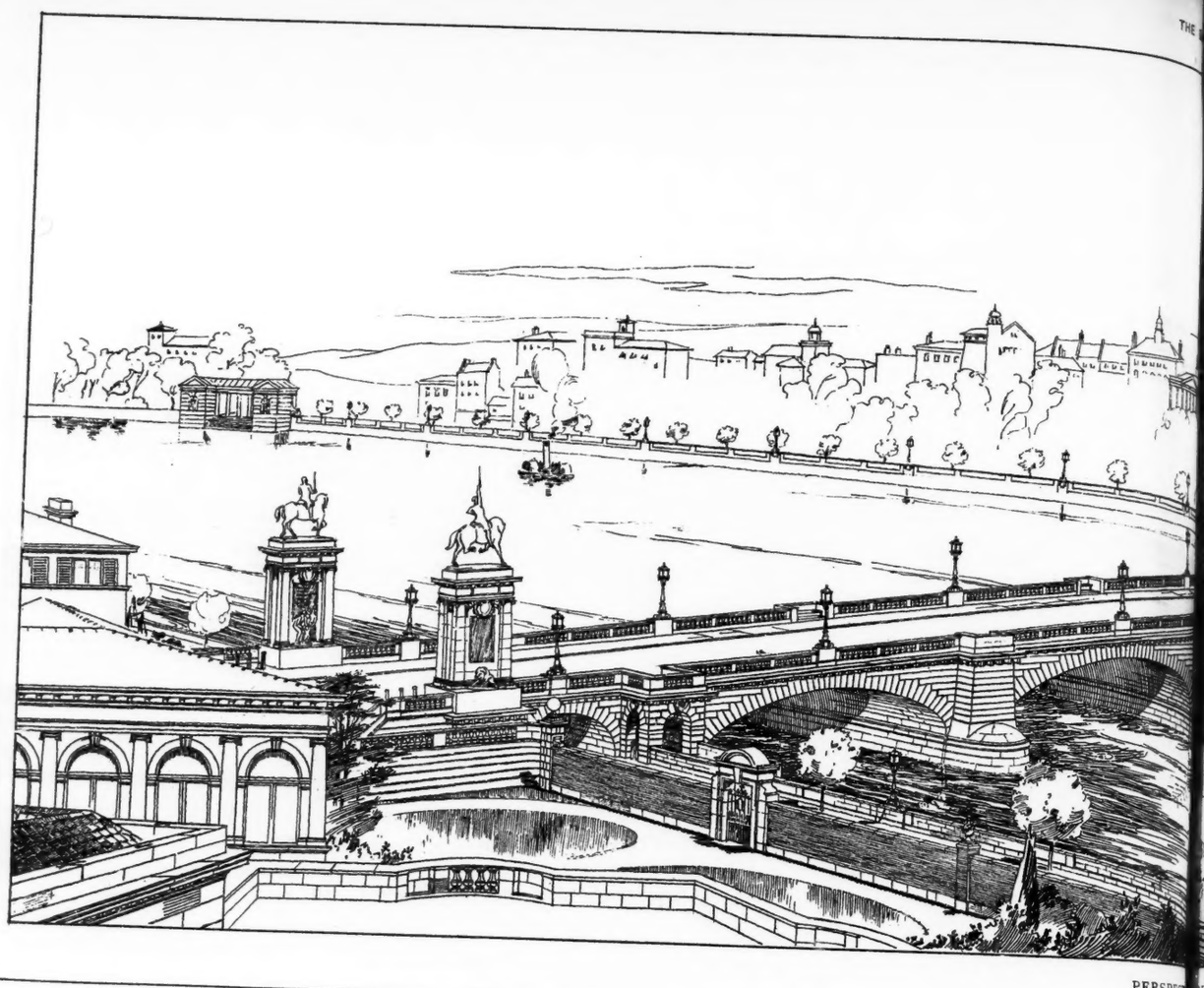

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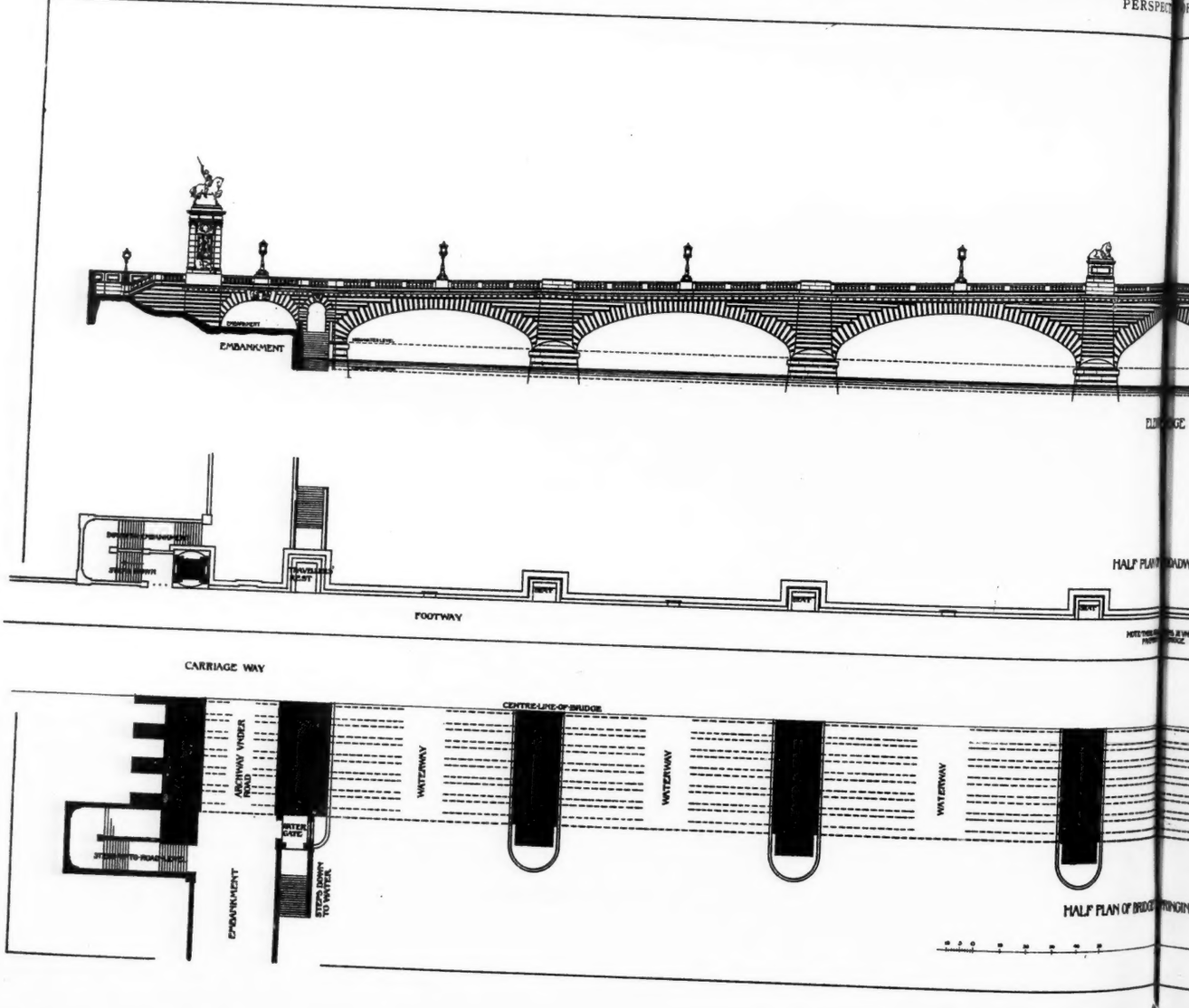

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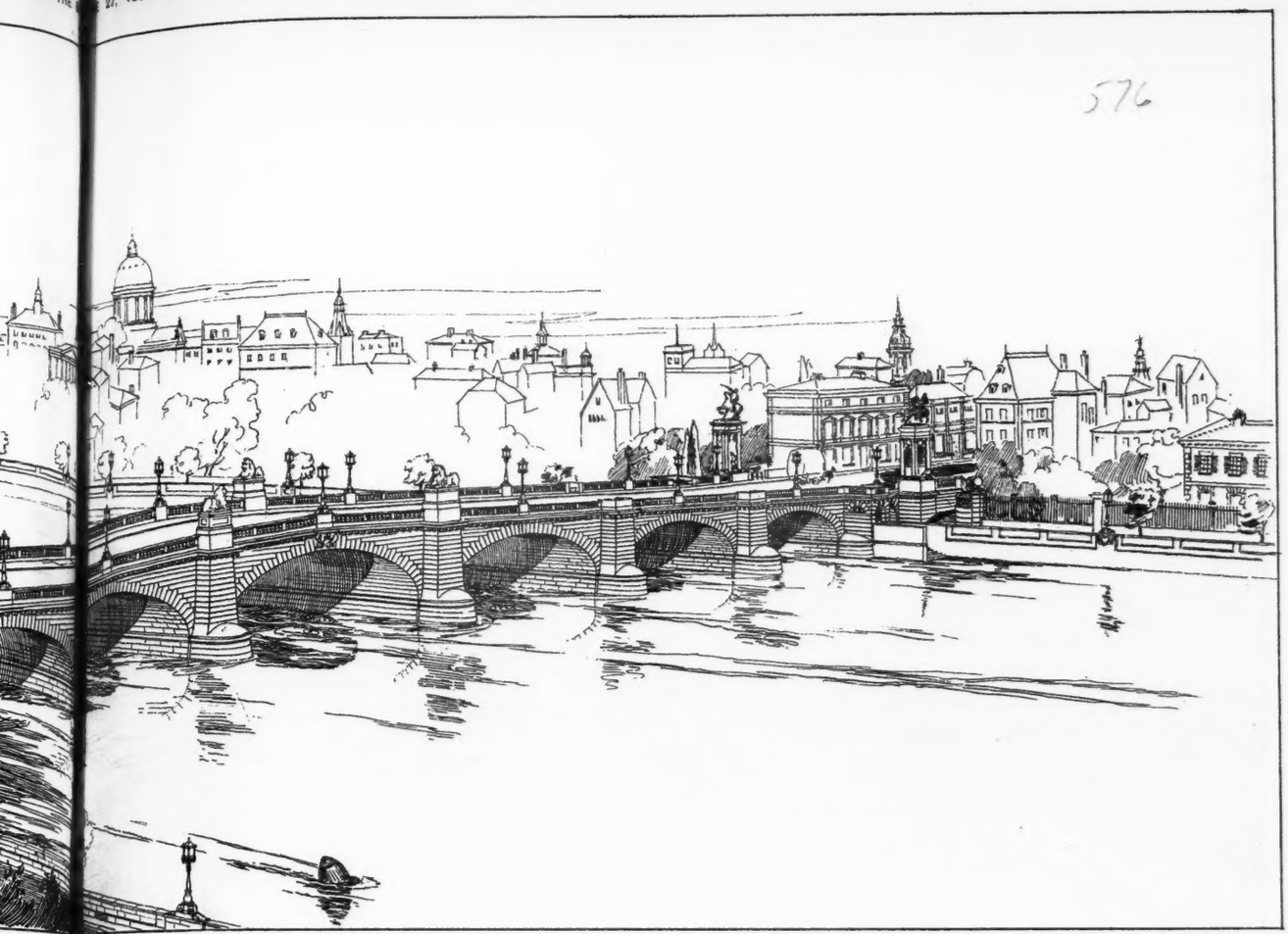

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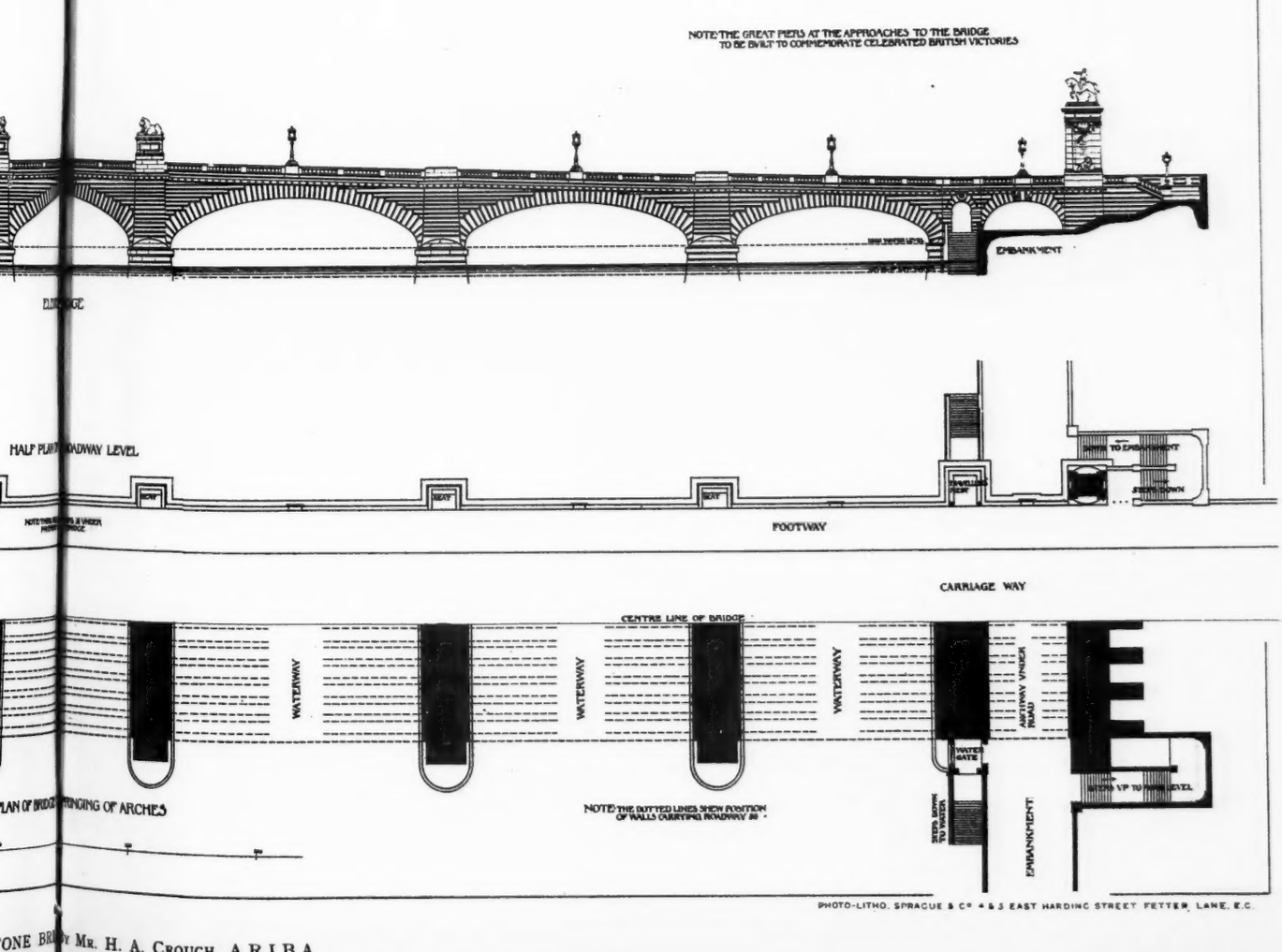

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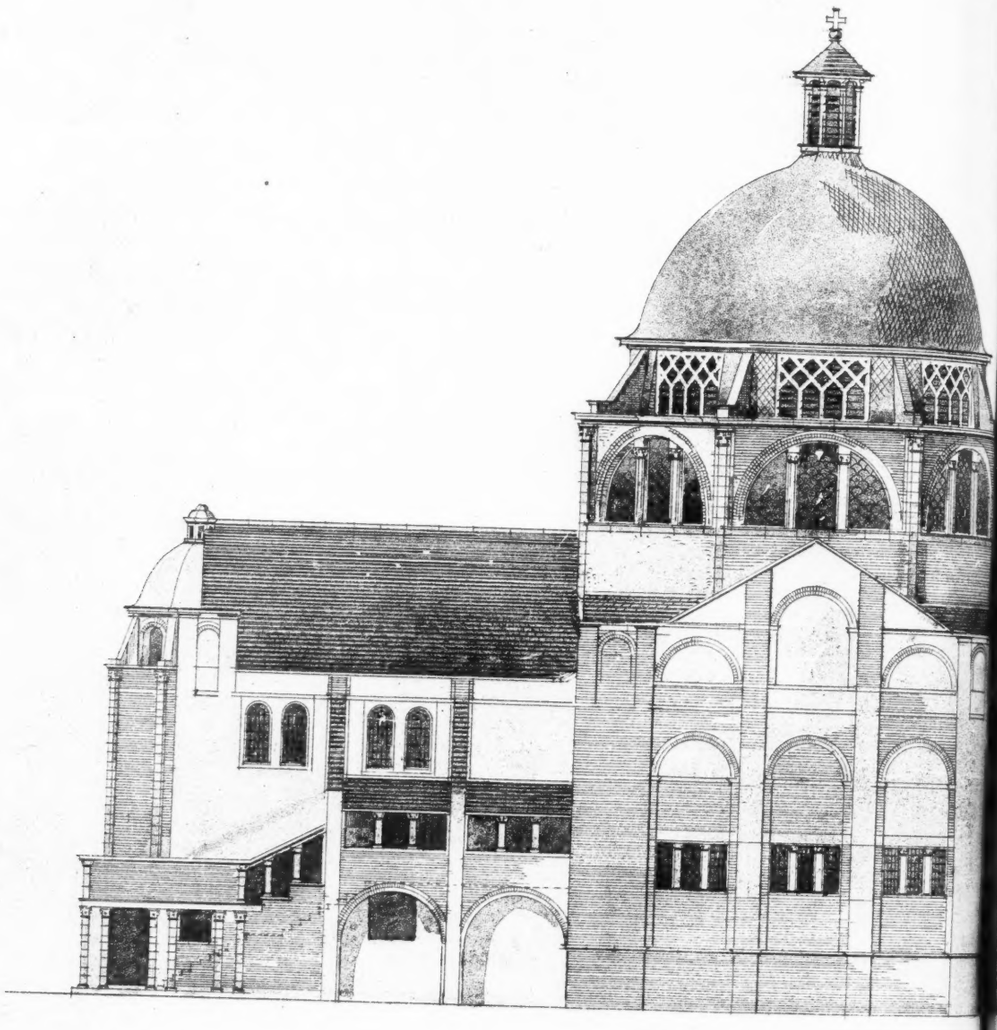

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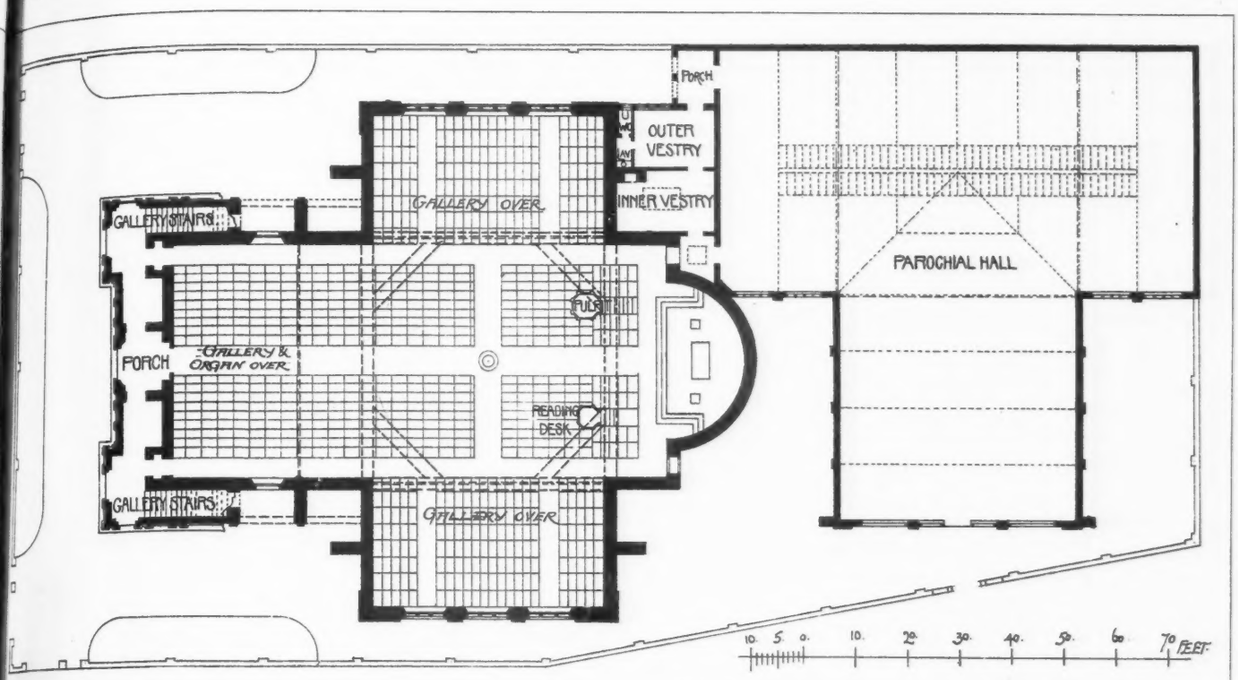

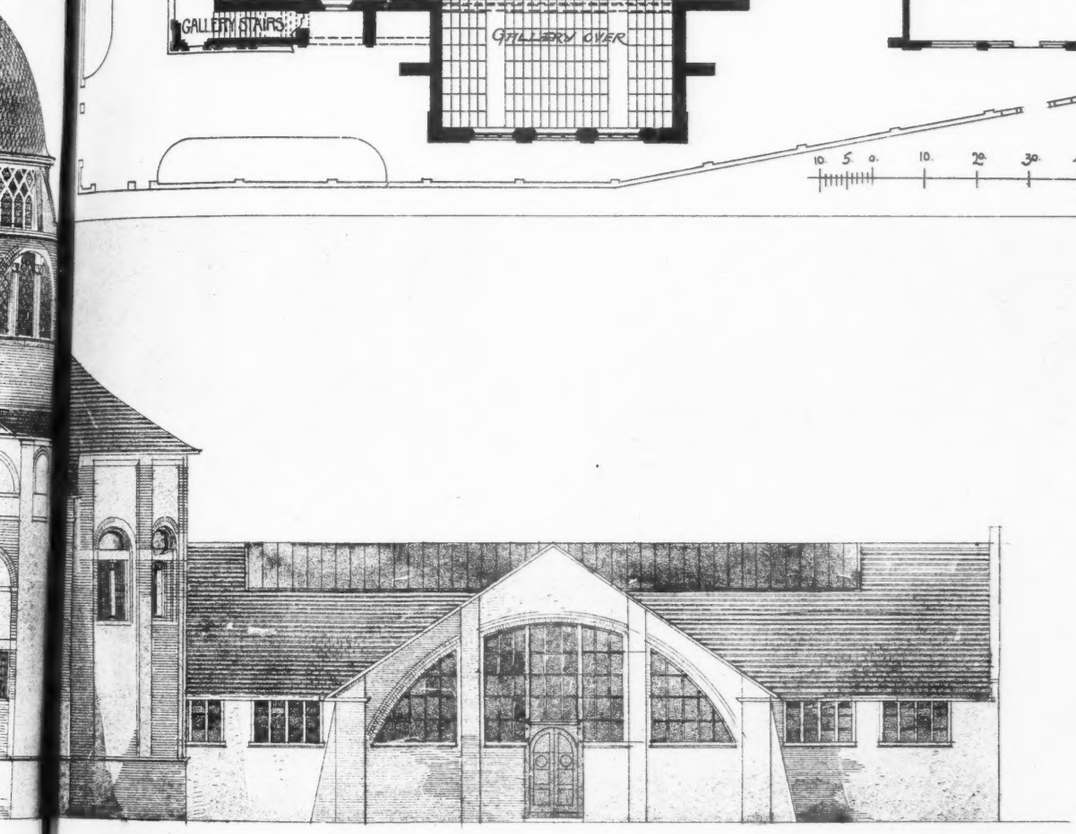

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